Statewide Summary of Oil and Hazardous Substance Spill Data

(Fiscal Years 1996-2002)

Provisional Report

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
November 2003

Statewide Summary of Oil and Hazardous Substance Spill Data

(Fiscal Years 1996-2002)

Provisional Report

prepared by

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
November 2003

Executive Summary

This spill data analysis report provides findings related to spills reported to the Alaska Department of Environmental Conservation (ADEC) for the seven-year period extending from July 1, 1995 to June 30, 2002 (State Fiscal Year (FY) 1996-2002). The spill data is used by ADEC staff to highlight any significant trends and focus prevention and outreach efforts to educate industry and the general public, as well as to validate budget submissions and resource allocation through a risk-based decision process. As an example, ADEC staff keyed on a noticeable trend in home heating oil tanks and launched a public outreach and awareness program in order to educate homeowners on spill prevention measures.

This report is considered to be a provisional draft as there are a few quality assurance/ quality control (QA/QC) issues associated with the information received over the past seven years. Additionally, significant changes have occurred over this period including activation and deactivation of Contingency Plan (C-Plan) facilities. Also, recent legislation (which became effective in FY2003) resulted in the regulation of non-tank vessels over 400 gross tons as well as the Alaska Railroad. Hence, this report includes spills from these entities under the "non-regulated" category. The statistical analysis performed was limited to a review of the basic data depicted in tables and charts. This report serves as the over-arching, summary report for existing spill data. DEC staff will develop additional reports which focus on specific issues related to spill prevention and response.

DEC's Prevention and Emergency Response Program (PERP) staff, as part of the Spill Prevention and Response (SPAR) Division, are primarily responsible for the SPILLS Database. Staff have completed the conversion of the SPILLS Database from Rbase to a web-based application. This conversion will enable official users to browse through spill data and acquire information on specific spills.

An electronic version of this report is also available on the ADEC website at:

http://www.state.ak.us/dec/dspar/perp/home.htm

Comments or questions concerning this report should be forwarded to Camille Stephens (907-465-5242, email: camille_stephens@dec.state.ak.us); Larry Iwamoto (907-269-7683, email: larry_iwamoto@dec.state.ak.us); or, Leslie Pearson (907-269-7543, email: leslie_pearson@dec.state.ak.us).

The following summary and tables present a synopsis of the information included in this report:

- A total of 15,731 spills were reported during FY 96-02, or an average of 2,247 spills per year. There is no apparent trend in the number of spills occurring annually within the state.
- Spills from unregulated facilities (84%) occur more than five times as frequently than spills from regulated facilities (16%), and result in over 2,260,000 gallons of spilled product (as compared to 807,512 gallons of spillage for regulated facilities).
- The majority of spills (57%) were 10 gallons or less; however, the largest percentage (94%, in terms of cumulative spill volume) occurred from spills of 100 gallons or more.
- The most common product category spilled was noncrude oil, which also accounted for nearly half of the total volume spilled during this seven-year reporting period. By comparison, crude oil spills made up only 4% of the total number of spills, and accounted for 16% of the total volume spilled.
- The largest spill in pounds was urea solid, at 220,000 pounds, and the largest spill in gallons was process water (brine) at 994,400 gallons.
- Process water spills accounted for 32% of the total volume of product spilled.
- Most spills occurred at transportation-related facilities; however, "Other" facilities generated the greatest volume spilled, and cargo barges generated the greatest mass spilled.
- Structural and mechanical systems failure was a major cause of spills. Capsized ships caused the largest

spill reported in pounds.

- The highest number of spills and the largest spill reported in pounds occurred in the Central Alaska Response Area and the Cook Inlet Subarea, respectively.
- The Northern Alaska Response Area experienced the greatest volume spilled. The NW Arctic Subarea experienced the highest overall spill volume.

Significant Spill Parameters and Values (Excluding Process Water)

Parameter	Most Common (Percent of Total Spills)	Greatest Volume (Percent of Total Gallons Spilled)
Size Category	Under 10 Gallons (57%)	100+ Gallons (94%)
Product	Diesel (34%)	Diesel (32%)
Product Category	Noncrude oil (81%)	Noncrude Oil (49%)
Facility Category	Transportation (45%)	Transportation (51%)
Cause Category	Structural/Mechanical (51%)	Structural/Mechanical (33%)
Response Area	Northern Alaska (42%)	Northern Alaska (33%)
Subarea	Cook Inlet (26%)	Northwest Arctic (29%)

Significant Spill Parameters and Values: Process Water

Parameter	Most Common (Percent of Total Spills)	Greatest Volume (Percent of Total Gallons Spilled)
Size Category	10 to 99 Gallons (7%)	100+ Gallons (99%)
Cause Category	Structural/Mechanical (68%)	Other (81%)
Facility Category	Transportation (70%)	Transportation (95%)
Subarea	North Slope (67%)	North Slope (94%)

Interesting Facts and Figures: Significant Spills (FY96-02)

Facility Type	Date of Spill	Location	Amount	Product
Transportation				
Pipeline	Oct 4, 2001	TAPS Milepost 400	285,600 gals	crude oil
Truck	Jul 19, 1999	Red Dog Mine	160,000 lbs	zinc concentrate
Rail	Dec 22, 1999	Gold Creek	120,516 gal	JP8 (jet fuel)
Air	Jun 22, 2002	Eielson AFB	100,000 gals	diesel
Vessel				
Tanker Vessel	Mar 24, 1989**	Prince William Sound (PWS)	11 million gals	crude oil
Fishing Vessel	Aug 4, 2001	PWS, F/V Windy Bay	35,000 gals	diesel
Other Vessel	Nov 26, 1997	Dutch Harbor (M/V Kuroshima)	39,000 gals	bunker C
Other Vessel	Jan 25, 1997	Cook Inlet (Barge Oregon)	220,000 lbs	urea
Storage				
Tank Farm	Mar 24, 2000	Unalakleet	84,360 gals	gasoline
EHS Facility				
Cannery (Ammonia)	Jul 1, 1998	Homer (Icicle Seafoods)	35,000 lbs	ammonia
Log Processing	Oct 21, 1996	Ketchikan	5,500 gals	acrylamide

**Spill occurred before the SPILLS database went into production.

Table of Contents

Introduction

In this study the Alaska Department of Environmental Conservation (ADEC) examines seven years of State spill reporting data to gain an understanding on a statewide and regional level the amount of petroleum and hazardous substances entering the environment from petroleum extraction, transportation, and consumption by human activity. Reported spills include those entering marine, freshwater, wetlands, land, air and groundwater. On average, the ADEC receives 2,247 spill reports each year.

PURPOSE, OBJECTIVE, AND SIGNIFICANCE OF DATA

The purpose of this study is to conduct a comprehensive analysis of oil and hazardous substance spills reported to the ADEC for the period of July 1, 1995 to June 30, 2002 using data collected and entered into the ADEC Prevention and Emergency Response Program (PERP) SPILLS database. The SPILLS database is linked to the ADEC Industry Preparedness Program Contingency Plan database. This linkage allows for the ability to analyze spill data for facilities and vessels regulated by the State of Alaska, as well as unregulated entities. **Figure 1** illustrates the major components of Alaska's oil production, transportation and storage system.

The overall objective of this study is to determine and develop a clear understanding of spill trends using parameters such as spill size, frequency, product, product category, facility category, cause category, geographic area, state regulated facilities and unregulated entities in Alaska.

The significance of this study is to identify spill trends and causal relationships with the intent of strengthening prevention components to reduce the occurrence of oil and hazardous substance spills and prepare for future spills in Alaska. The report also validates SPAR budget submissions, statewide positioning of response equipment assets, and resource allocations by applying a risk-based decision-making process. Data analysis and interpretation will assist the ADEC with the development of prevention program initiatives for unregulated entities. The comprehensive analysis will assist in identifying facilities where regulatory inspections and exercises may be conducted to prevent future spills. Interpreting the data geographically will aid governmental entities to focus on communities where prevention, response, and preparedness enhancements could be implemented to mitigate spill impacts.

BACKGROUND

Oil Activities in Alaska

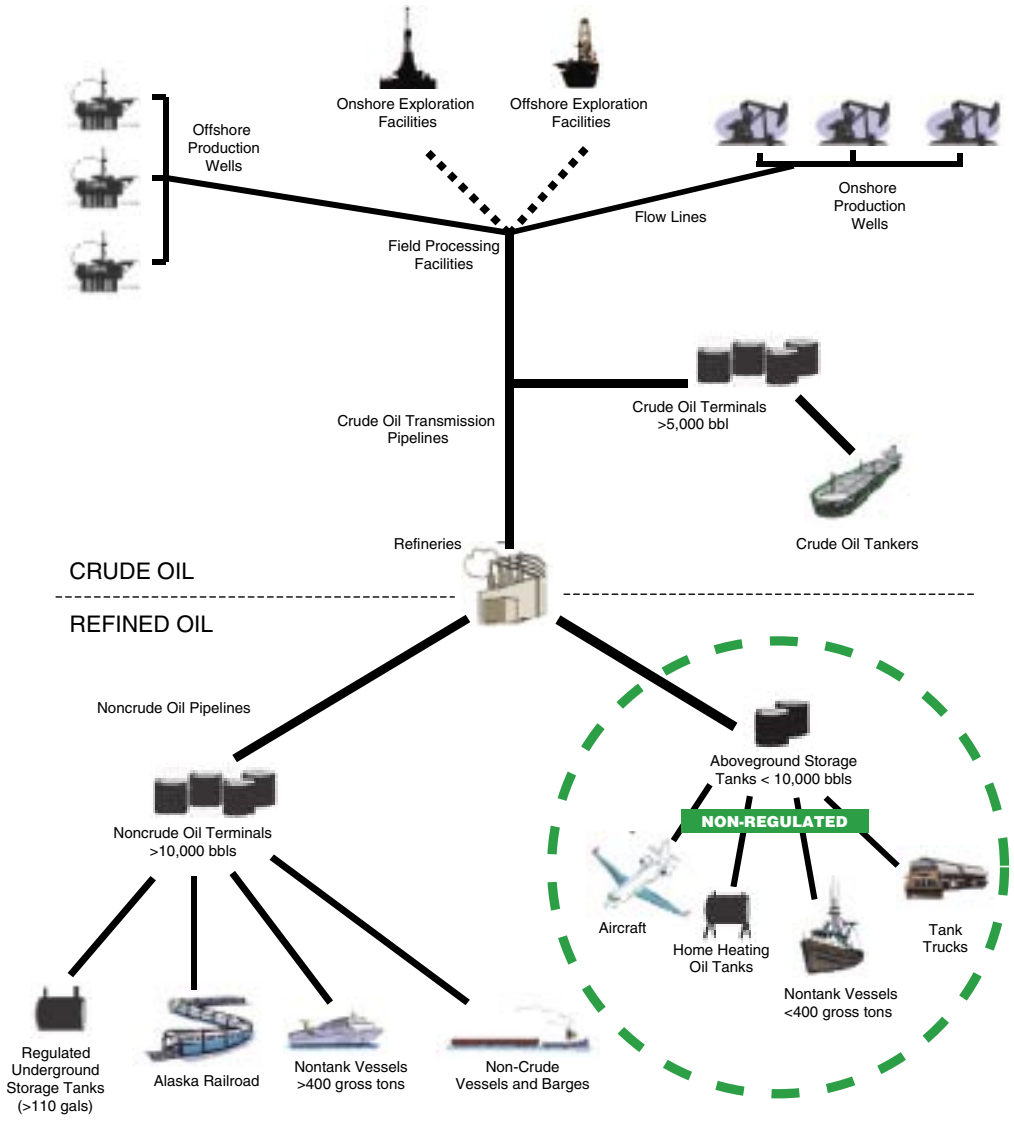
Alaska currently produces approximately one million barrels per day of crude oil after peaking as the nation's biggest oil producing state at two million barrels per day. Oil and gas exploration began early in Alaska's history on the North Slope and in Cook Inlet. The discovery of world class oil reserves at Prudhoe Bay presented many new challenges for the state. The oil transport and delivery system in Alaska includes drilling platforms/well sites, sub-sea and terrestrial pipelines, tanker terminals, tanker transportation, refinery and oil storage facilities, and fuel barges. Alaska has drilling operations both onshore and offshore. Offshore drilling occurs in both the arctic and sub-arctic regions, in ice-infested waters or seasonally ice-infested waters, and in areas of extreme tidal currents.

The Port of Valdez is one of the largest ports in the nation in terms of total crude oil tonnage transported from the region. There are over 800 tanker calls at the Alyeska Valdez Marine Terminal in any given year with ships ranging in size from 60,000 to 265,000 dead weight tons (DWT) capacity.

Petroleum and chemical consumption by human related activities can result in spills to the environment. Damage from leaks in the system could have either chronic or catastrophic economic and environmental impacts. Loading operations at the terminals have been very successful in terms of minimizing oil spillage into the marine environment. There is always a risk of a large spill occurring during loading operations, and there is risk of a spill associated with the large tank storage facilities located at the terminals. The tanker transportation system

Figure 1

Oil Production, Transportation and Storage in Alaska



Major components of Alaska's oil production, transportation and storage system. State-approved oil discharge prevention and contingency plans are required for regulated facilities and vessels. Plans are now in place for over 30 million barrels of crude and non-crude oil handled by Alaska's storage and transportation system. The facilities designated as "non-regulated" are not required to have a state-approved oil discharge prevention and contingency plan.

in Alaska has received a great deal of attention following the *T/V Exxon Valdez* oil spill. The Oil Pollution Act of 1990 significantly enhanced prevention and response requirements for tank vessels and requires all single-hulled tankers be replaced with double-hulled tankers by the year 2010.

Spill Reporting Requirements

The general requirements for reporting spills of oil and hazardous substances to the state are found in Alaska Statute (AS 46.03.755, AS 46.03.745 and AS 46.09.010) and regulations (18 AAC 75.300). These requirements are summarized on the ADEC Spill Reporting Placard, which is regularly updated to list current telephone and fax numbers for contacting ADEC during and after business hours.

Under 18 AAC 75.300(a)(1), a person in charge of a facility or operation is required to notify the Department as soon as the person has knowledge of any discharge of a hazardous substance other than oil. "Hazardous substance" is defined as "an element or compound which…presents an imminent and substantial danger to the public health or welfare…" [AS 46.03.826(5)(A)]. The regulation also sets forth specific time frames for the reporting of oil spills based on three receiving environments-water, land, or an impermeable secondary containment area or structure. Notwithstanding these requirements, AS 46.03.755(b) authorizes the ADEC to enter into a written agreement with a person for the periodic reporting of minor discharges other than into state waters.

Homeowners are exempt from the reporting requirements of 18 AAC 75.300 based on the definition of "person in charge", which excludes persons "exercising a possessory interest…solely for the purpose of providing a place of residence for the person" (18 AAC 75.990(47) (C)). However, homeowners are not exempt from liability for a spill under AS 46.03.822 (Strict Liability for the Release of Hazardous Substances).

Reporting Conventions for Oil and Hazardous Substance Spills

Hazardous Substance Discharges: Any release of a hazardous substance must be reported immediately (i.e., as soon as the person has knowledge of the discharge).

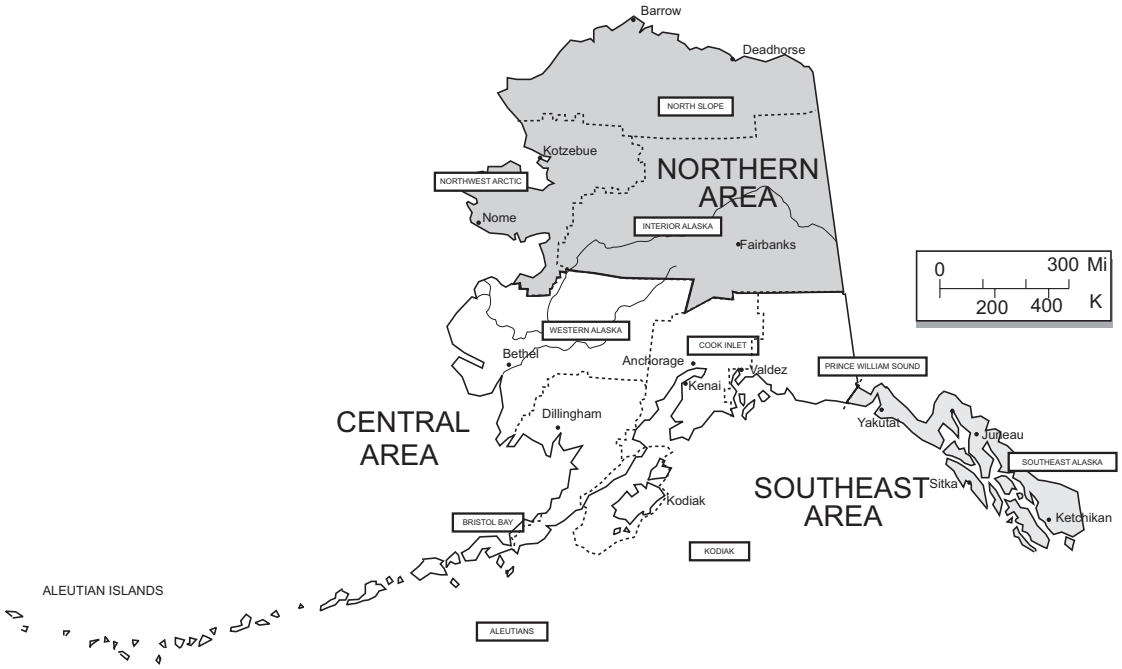
Oil Discharges:

- **To Water:** Any release of oil to water must be reported immediately (i.e., as soon as the person has knowledge of the discharge).
- **To Land:**
  - Any release of oil in excess of 55 gallons must be reported immediately (i.e., as soon as the person has knowledge of the discharge).
  - Any release of oil in excess of 10 gallons but less than 55 gallons must be reported within 48 hours after the person has knowledge of the discharge.
  - A person in charge of a facility or operation shall maintain and provide to DEC on a monthly basis, a written record of any discharge of oil from 1 to 10 gallons.
- **To Impermeable Secondary Containment Areas**
  - Any release of oil in excess of 55 gallons must be reported within 48 hours after the person has knowledge of the discharge.

ADEC Regions/Subareas and Response Areas

In 1991, 18 AAC 75.495 established within the State of Alaska ten regions for the purpose of preparing regional oil and hazardous substance contingency plans as required by AS 46.04.210. The ten regions are, Southeast Alaska, Prince William Sound, Cook Inlet, Kodiak Island, Aleutian, Bristol Bay, Western Alaska, Northwest Arctic, North Slope and Interior Alaska. The ADEC divided the State into three spill response jurisdiction areas. Figure 2 provides a map and boundary definitions for the planning and response regions or subareas, and the three ADEC response areas.

Figure 2: Map-- ADEC Subareas and Response Areas.



18 AAC 75.495. REGIONAL MASTER DISCHARGE PREVENTION AND CONTINGENCY PLAN

(a) The regions described in this subsection and depicted on the map at Figure 1 are established for the purpose of preparing a regional master oil and hazardous substance discharge prevention and contingency plan as required by AS 46.04.210 :

(1) Southeast Alaska Region: that area of the state east of 142ø W. longitude and south of a line just west of Icy Bay that connects the U.S.-Canadian border with the Gulf of Alaska, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(2) Prince William Sound Region: that area south of 63ø30' N. latitude, west of the region described in (1) of this subsection, and east of the region described in (3) of this subsection, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(3) Cook Inlet Region: that area encompassed by the boundaries of the Kenai Peninsula Borough, the Municipality of Anchorage, and the Matanuska-Susitna Borough, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(4) Kodiak Island Region: that area encompassed by the boundaries of the Kodiak Island Borough, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(5) Aleutian Region: that area encompassed by the boundaries of the Aleutians East Borough and the Aleutians West Coastal Resource Service Area, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(6) Bristol Bay Region: that area encompassed by the boundaries of the Bristol Bay Coastal Resource Service Area, the Bristol Bay Borough, and the Lake and Peninsula Borough, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(7) Western Alaska Region: that area north of the area described in (6) of this subsection, encompassed by the boundaries of the southernmost boundary of the Bering Straits Regional Corporation, and Regional Educational Attendance Areas 11 and 5, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(8) Northwest Arctic Region: that area encompassed by the Northwest Arctic Borough and the Bering Straits Regional Corporation, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured;

(9) North Slope Region: that area encompassed by the boundaries of the North Slope Borough, including adjacent shorelines and state waters, and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured; and

(10) Interior Alaska Region: that area of the state not included in (1) - (9) of this subsection.

(b) If the department finds that a discharge that could occur in an area beyond the territorial sea would not have a significant adverse impact on the resources of the state or on other interests of the state, the department will, in its discretion, adjust the seaward boundary of a region established in (a) of this section to exclude that area.

Oil Spill Summary Reports

In 1999, an Oil Spill Summary Report for Fiscal Years 1996-1998 was prepared by Emcon Alaska, Inc. for the ADEC. The report was a summary of reported spills of oil and chemicals in Alaska during the period of July 1, 1995 through June 30, 1998. A comprehensive analysis of spill data was performed to identify the types of industries, locations, and activities most commonly associated with a spill. Specifically, data related to spill size, frequency, substance, cause, source, location and time of year were examined for relationships between the number of spills and the volume or mass of spills. The purpose of the report was to convey the information in the ADEC SPILLS database in a clear, concise manner and to further ADEC's efforts to prevent and prepare for future spills.

In May 2002, the National Research Council (NRC) issued a report titled, *Oil in the Sea III: Inputs, Fates, and Effects*. This study, as did two previous NRC reports, attempted to develop a sense of the major sources of petroleum contamination entering the marine environment, and whether the volume or sources introduced have changed over time.

The Emergency Response Notification System (ERNS) database is located at the National Response Center (NRC) website. The NRC is the sole federal point of contact for reporting oil and chemical spills. National statistics may be accessed at: http://www.nrc.uscg.mil/stats.html

The Pacific States/British Columbia Oil Spill Task Force has also initiated a project to consolidate spill reports into a database for the area of concern (Alaska, Washington, California, Oregon, Hawaii, and British Columbia). For information regarding this initiative, visit the following website: http://wlapwww.gov.bc.ca/eeeb/taskforc/datapro.htm

Hazardous and Extremely Hazardous Substances Reports

In late 1993, the ADEC initiated the statewide hazards analysis project. The project consisted of a series of tasks leading to a primary objective of characterizing the hazards posed by certain chemical substances across the state. In 1995, a cumulative State and Regional Hazard Profile report was prepared for the ADEC by Easton Environmental. The 1995 report profiled the hazards associated with extremely hazardous substances (EHS) in Alaska. It identified the substances, where they were found, how they were transported, the risks they posed to the general public, and the response capability.

In 1998, an updated Statewide Hazardous Material Inventory was prepared for the ADEC by Hart Crowser. The 1998 study added two additional sections, one for hazardous substances and one for petroleum products. A hazards analysis section was not included as part of the 1998 report. In 1999, a subsequent Statewide Hazardous Material Inventory was conducted by Hart Crowser for the ADEC and in September of 2000 a report titled, "Evaluation of Chemical Threats to the Alaska Public" was prepared for the ADEC by Hart Crowser.

Information for all of these reports was collected primarily using the Tier Two reports required under the Superfund Amendments and Reauthorization Act (SARA) Title III, Community Right-to-Know Act. Tier Two reports are due to the State Emergency Response Commission (SERC) by March 1 of each year. A 2002 survey of Tier Two reporting facilities indicated that there are 809 facilities that store reportable quantities of hazardous substances in Alaska. This does not include transportation facilities, which are exempt from Tier Two reporting. Reportable substances include explosives, poisons, flammable solids, radioactive substances, compressed gases, and substances which require a material safety data sheet (MSDS). EHS chemicals most commonly stored and used in Alaska include chlorine, ammonia, and sulfuric acid. The state experiences an average of 62 EHS releases per year. Ammonia (39%), sulfur dioxide (25%) and chlorine (18%) were the most common EHS released.

SCOPE & LIMITATION

The original Statewide ADEC SPILLS database, a DOS application, went into production July 1, 1995. The database was developed to electronically manage information about oil and hazardous substance releases on a statewide basis. During calendar year 2001, the database was redeveloped as a web-based application with a sequel server or SQL backend. This new application went into production in September 2001. The database is currently used for spill statistics and caseload management. In addition, the database is used to provide information for use in other ADEC programs and to respond to inquiries from the public about spills. The data frame used for this report contains 15,731 statewide entries over a 7-year period.

The SPILLS database is currently linked to the ADEC Industry Preparedness Program (IPP) database used to track facilities that are required to submit Oil Discharge Prevention and Contingency Plans to the ADEC. The IPP database has a total of 288 facilities identified, which includes 162 vessel plans, 75 oil terminal plans, 49 exploration and production plans, one pipeline plan and one marine terminal plan. A facility identification number is assigned to each facility covered by an Oil Discharge Prevention and Contingency Plan which serves as the link between the SPILLS database and the CPLAN database. This connection provides the ability to analyze spill reporting data for state regulated facilities. For the purpose of this report regulated facility categories are defined as pipelines, refineries, terminals, exploration and production facilities, tanker vessels, and barges.

In addition to examining spill data at state regulated facilities a comprehensive analysis of spill data was performed to identify the types of unregulated facilities, locations, and activities most commonly associated with a spill. Specifically, data relating to the following spill parameters were examined for relationships between the number of spills and the volume or mass of spills:

- Number of Spills and Spill Volume
- Substances
- Causes
- Facility Type
- State Regulated Facilities
- Unregulated Facilities
- Location

Spill substances are broadly divided into three categories: crude oil, noncrude (refined) oil, and chemicals. Each of the following subcategories was analyzed and discussed individually.

Substances

- Oil
  - Crude Oil
  - Noncrude Oil
    - Diesel
    - Gasoline
- Chemicals
  - Process Water
  - Hazardous Substances
  - Extremely Hazardous Substances

Spill Size*. Spill size classes are divided into three categories:

- Under 10 gallons/pounds
- 10 to 99 gallons/pounds
- > 100 gallons/pounds

**NOTE: For the purposes of this report, most of the oil and hazardous substance spills were reported in gallons, while the majority of EHS releases were reported in pounds.*

Cause. Spill causes are broadly divided into four cause categories:

- Human factors
- Natural causes
- Structural/Mechanical
- Other

Facilities. Facilities are broadly divided into four categories:

- Transportation
- Storage
- Vessel/Barges
- Other

In this study descriptive statistics were used to analyze the spill data. Statistical analysis was used to measure frequency and distribution. Frequency counts and distribution were applied to qualitatively understand spill trends based on the listed parameters. As with any database, the accuracy of reported information resides with the initial and follow-on data entry by ADEC staff. Data for each record may be incomplete in a few cases.

The report is organized into three main sections. Section I, Statewide Data Summary, provides an overall analysis of the total number of spills, spill size, product, facility type, regulated and unregulated facilities, and cause. Section II contains an analysis of spills by substances, including size class, cause, and facility type, regulated and unregulated facilities and geographic areas. Section III addresses spills by subarea. This report also provides an appendix for acronyms and the glossary and an appendix listing significant releases from July 1, 1995 to June 30, 2002.

METHODS & PROCEDURE

Oil and hazardous substance spill reports are received by the ADEC area response teams from the responsible party or complainant by telephone or facsimile. The report is then entered into the database by ADEC staff. The spill records are loaded into a web application for browsing and editing upon user request. A user manual provides instructions on the use of the database. The application provides a variety of formats for new and existing spill records, including data entry forms, ad hoc query results, and reports. Data for each spill record is organized into categories, with each category provided on a separate panel.

This report is based on a dataset extracted from the production database and imported as a table into Microsoft Access 2002. This approach provided a static set of records to analyze, and precluded any problems caused by spill records being added or edited which would affect the spill counts and quantities released. All queries were created in Access and the results were directly exported to Microsoft Excel 2002. Excel was used to format the summary tables and to create the graphs used in the report. The report itself was created using Adobe InDesign 2.0. All data summary tables and graphs were converted to PDF files (Adobe Acrobat Portable Document Format) and “placed” in the InDesign document.

Definitions and Classifications

Accidents (Cause): Spills caused by accidents may be categorized as follows: collision/allision; derailment; grounding; rollover/capsize; and well blow-out.

Causes: See Appendix A, for the cause classification scheme used in the SPILLS Database.

Crude Oil: Unrefined liquid petroleum, ranging in gravity from 9° API to 55° API and in color from yellow to black. May have a paraffin, asphalt, or mixed base. If the oil contains a sizable amount of sulfur or sulfur components, it is called a sour crude; if it has little or no sulfur, it is called a sweet crude. In addition, crude oil may be referred to as heavy or light, according to API gravity, the lighter oil having the higher gravities.

Diesel Fuel: A light hydrocarbon mixture for diesel engines, similar to furnace fuel oil; it has a boiling range just above that of kerosene.

Exploration Facility: means a platform, vessel, or other facility used to explore for hydrocarbons in or on the waters of the state or in or on land in the state; the term does not include platforms or vessels used for stratigraphic drilling or other operations that are not authorized or intended to drill to a producing formation.

Extremely Hazardous Substance (EHS): Although there is no definition for extremely hazardous, the Senate Report on the Clean Air Act provides criteria EPA may use to determine if a substance is extremely hazardous. The report expressed the intent that the term "extremely hazardous substance" would include any agent "which may or may not be listed or otherwise identified by any Government agency which may as the result of short-term exposures associated with spills to the air cause death, injury or property damage due to its toxicity, reactivity, flammability, volatility, or corrosivity". The term "EHS" otherwise includes substances listed in the appendices to 40 CFR part 355, Emergency Planning and Notification.

Facility: means any offshore or onshore structure, improvement, vessel, vehicle, land, enterprise, or endeavor. See Appendix A for the Facility Classification scheme used in the SPILLS Database.

Gasoline: A volatile, flammable liquid hydrocarbon refined from crude oils and used universally as a fuel for internal-combustion, spark ignition engines.

Hazardous Substance: means (A) an element or compound that, when it enters into or on the surface or subsurface land or water of the state, presents an imminent and substantial danger to the public health or welfare, or to fish, animals, vegetation, or any part of the natural habitat in which fish, animals, or wildlife may be found; or (B) a substance defined as a hazardous substance under 42 U.S.C. 9601-9657 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980); "hazardous substance" does not include uncontaminated crude oil or uncontaminated noncrude (refined) oil in an amount of 10 gallons or less.

Human Factors (Cause): Spills caused by human factors may be categorized as follows: bilge discharge; cargo not secured; human error; intentional release; overfill; sabotage/vandalism; and sinking.

Nontank Vessel: means a self-propelled watercraft of more than 400 gross registered tons; in this paragraph, "watercraft" includes commercial fishing vessels, commercial fish processor vessels, passenger vessels, and cargo vessels, but does not include a tank vessel, oil barge or public vessel.

Noncrude Oil: See Appendix A, Substance Classification, for the different types of substances that are classified as noncrude oil.

Oil: means petroleum products of any kind and in any form, whether crude, noncrude (refined), or a petroleum by-product, including petroleum, fuel oil, gasoline, lubricating oils, oily sludge, oily refuse, oil mixed with other wastes, liquefied natural gas, propane, butane, and other liquid hydrocarbons regardless of specific gravity.

Oil Barge: means a vessel which is not self-propelled and which is constructed or converted to carry oil as cargo in bulk.

Oil Terminal Facility: means an onshore or offshore facility of any kind, and related appurtenances, including but not limited to a deepwater port, bulk storage facility, or marina, located in, on, or under the surface of the land or waters of the state, including tide and submerged land, that is used for the purpose of transferring, processing, refining or storing oil; a vessel, other than a nontank vessel, is considered an oil terminal facility only when it is used to make a ship-to-ship transfer of oil; and when it is traveling between the place of the ship-to-ship transfer of oil and an oil terminal facility.

Other (Cause): Spills resulting from "other" causes may be categorized as follows: explosion; external factors; and other causes.

Other (Facility Classification): "Other" facilities listed in the ADEC SPILLS Database are classified as follows: drug lab; firing range; landfill/dump; other; salvage/wrecking yard; amd unknown.

Pipeline: means the facilities, including piping, compressors, pump stations, and storage tanks, used to transport crude oil and associated hydrocarbons between production facilities or from one or more production facilities to marine vessels.

Process Water (Oil Exploration and Production Operations): Process water includes seawater (and occasionally freshwater) and produced water. Seawater is injected into a formation to pressurize the reservoir and force the oil toward the oil production wells. Gelled water is seawater and freshwater that is mixed with a gelling substance to increase the viscosity of the fluid for a number of purposes. Seawater is also used to maintain the existing wells or to detect leaks in pipelines. Produced water is the water mixture consisting of oil, gas, and sand that is pumped from oil production wells. The percentage of crude oil occurring in process water can vary somewhat based on the source of the spill.

Process Water (Mining Operations): Process water for mining operations include water taken from tailing ponds for the milling process (reclaim water), water that has been through the water treatment plant but not the sand filter (process water), water that has been through both the water treatment and sand filter (discharge water), water mixed with ground ore materials (slurry) or water used in the milling and product recovery process (process solution water).

Production Facility: means a drilling rig, drill site, flow station, gathering center, pump station, storage tank, well, and related appurtenances on other facilities to produce, gather, clean, dehydrate, condition, or store crude oil and associated hydrocarbons in or on the water of the state or on land in the state; and gathering and flow lines used to transport crude oil and associated hydrocarbons to the inlet of a pipeline system for delivery to a marine facility, refinery, or other production facility.

Public Vessel: means a vessel that is operated by and is either owned or bareboat chartered by the United States, a state or a political subdivision of that state, or a foreign nation, except when the vessel is engaged in commerce.

Railroad Tank Car: means rolling stock used to transport oil in bulk as cargo by rail.

Storage (Facility Classification): Storage facilities listed in the ADEC SPILLS Database are classified as follows: cannery; farm/aquaculture; gas station; laundry service; log processing; logging operation; maintenance yard/shop; mining operation; crude oil terminal; non-crude oil terminal; power generation; refinery operation; residence; school; telecommunications; and water/wastewater facility.

Structural/Mechanical (Cause): A structural/mechanical cause may include the following: containment/overflow; corrosion; crack; equipment failure; erosion; gauge/site glass failure; hull failure; leak; line failure; puncture; seal failure; support structure failure; tank failure; tank support structure failure; valve failure; and vehicle leaks.

Tank Vessel: means a self-propelled waterborne vessel that is constructed or converted to carry liquid bulk cargo in tanks and includes tankers, tankships, and combination carriers when carrying oil; the term does not include vessels carrying oil in drums, barrels, or other packages, or vessels carrying oil as fuel or stores for that vessel.

Train: means connected rolling stock operated as a single moving vehicle on rails; for purposes of this paragraph, "connected rolling stock" includes railroad tank cars.

Transportation (Facility Classification): Transportation facilities listed in the ADEC SPILLS Database are classified as follows: air transportation (aircraft); air transportation (airport/airfield); harbor/port facility; oil exploration (offshore); oil exploration (onshore); oil production (offshore); oil production (onshore); flow lines; field processing; railroad operation; transmission pipeline; and vehicle.

Vessel (Facility Classification): Vessels listed in the ADEC SPILLS Database are classified as follows: Vessels 400 gross tons (GT) or more (includes barges, cargo vessels, other vessels, fishing vessels, passenger vessels, and tankers); Vessels less than 400 GT (includes cargo vessels, other vessels, fishing vessels and passenger vessels).

Vessel: includes tank vessels, oil barges, and nontank vessels.

SOURCES:

Alaska Statutes (AS 46, Current Edition)

A Dictionary of Petroleum Terms (Third Edition), The University of Texas at Austin, Petroleum Extension Service, 1983

U.S. EPA Chemical Emergency Preparedness and Prevention Office (CEPPO) website

ADEC/SPAR Classification Scheme

Section I: Statewide Data Summary

A. Overall Summary

Total Number of Spills and Volume Spilled

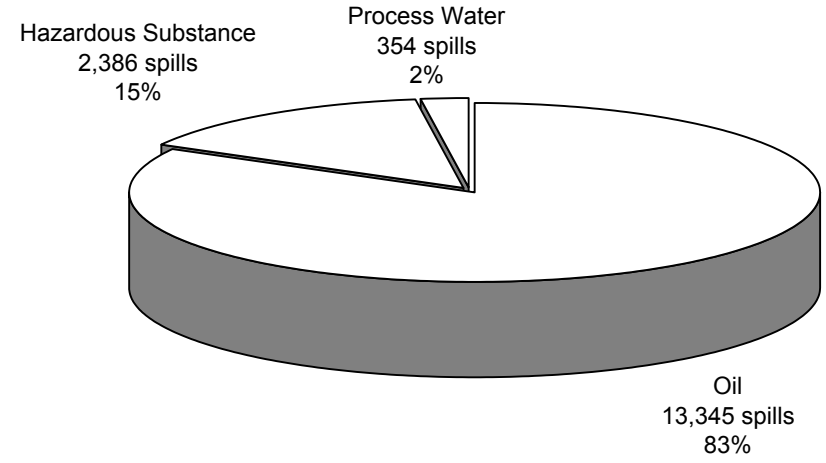
There were no significant trends in the number of spills over this seven-year period. Excluding process water spills, the total quantity of oil and hazardous substances spilled per year averaged approximately 420,000 gallons.

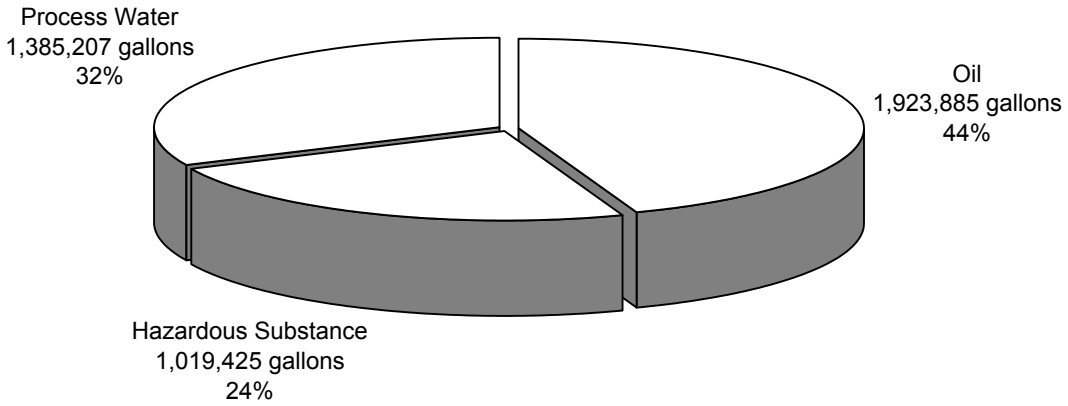
The largest spill during this reporting period occurred on the North Slope on March 17, 1997. A total of 994,000 gallons of process water was spilled (cause undetermined).

Process water accounted for almost 1/3 of the total volume of product spilled.

Number of Spills and Total Volume Spilled

	Oil		Hazardous Substance		Process Water		Total	
Fiscal Year	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	1,913	211,117	343	55,292	48	28,493	2,304	294,902
1997	1,816	180,116	296	46,995	42	1,014,844	2,154	1,241,955
1998	1,997	286,736	396	279,177	60	86,398	2,453	652,311
1999	2,042	131,079	280	182,792	47	27,050	2,369	340,921
2000	1,961	350,251	311	101,914	54	51,105	2,326	503,270
2001	2,052	197,180	432	312,985	44	114,421	2,528	624,586
2002	1,564	567,406	328	40,270	59	62,896	1,951	670,572
Total	13,345	1,923,885	2,386	1,019,425	354	1,385,207	16,085	4,328,517
Average	1,906	274,841	341	145,632	51	197,887	2,298	618,360

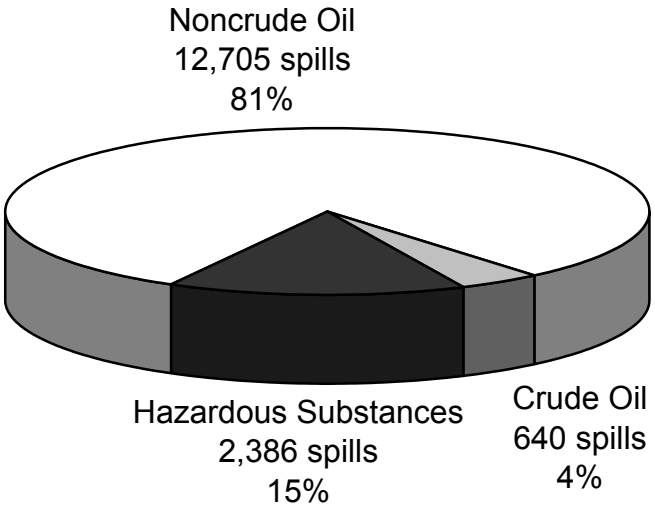




Spills by Product *(excluding Process Water)*

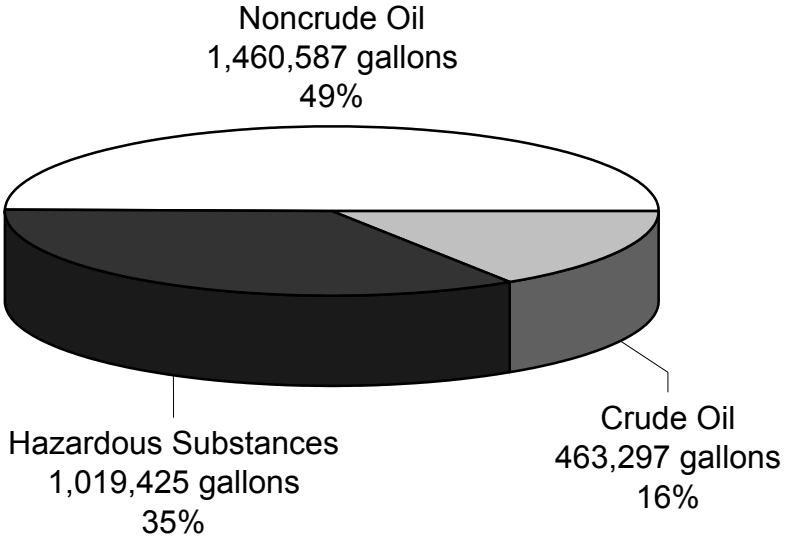
	Product					
	Crude Oil		Hazardous Substances		Noncrude Oil	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	99	50,750	343	55,292	1,814	160,367
1997	108	18,873	296	46,995	1,708	161,243
1998	116	9,905	396	279,177	1,881	276,831
1999	81	12,770	280	182,792	1,961	118,309
2000	92	3,156	311	101,914	1,869	347,095
2001	80	73,625	432	312,985	1,972	123,555
2002	64	294,218	328	40,270	1,500	273,187
Total	640	463,297	2,386	1,019,425	12,705	1,460,587

Number of Spills by Product



- Crude Oil: No significant trends.
- An average of 92 crude oil spills per year, with an average of approximately 722 gallons spilled per incident.
- Noncrude Oil: No significant trends.
- Noncrude Oil: An average of 1,815 spills per year, with an average spill volume of 115 gallons per incident.
- Noncrude oil spills accounted for almost half of the total volume spilled in Alaska.
- All Hazardous Substances: No significant trends. An average of 341 spills per year, with an average spill volume per incident of 427 gallons. "Other" and Ethylene Glycol spills made up approximately 66% of the spills.

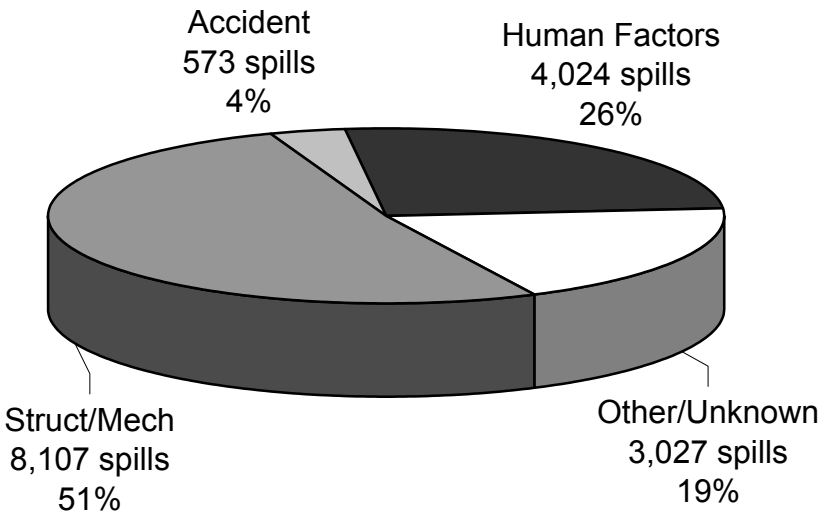
Gallons Spilled by Product



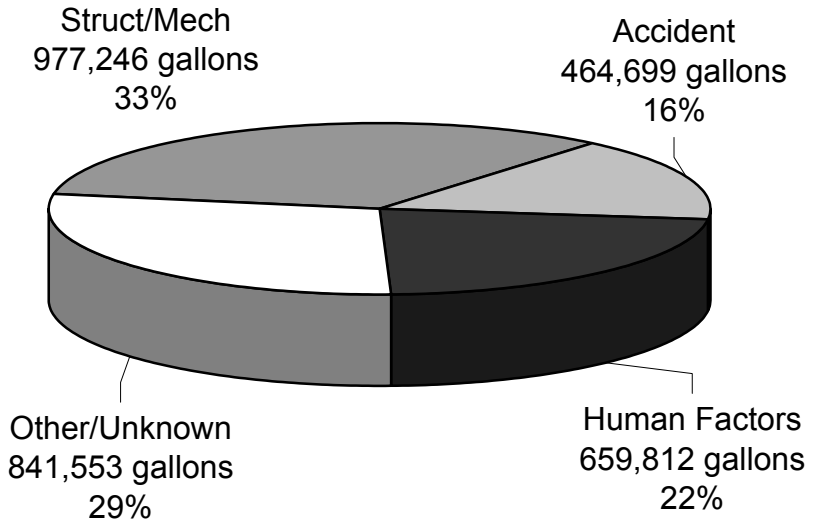
Spills by Cause *(excluding Process Water)*

	Cause							
	Accident		Human Factors		Other/Unknown		Struct/Mech	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	87	35,092	663	71,973	451	22,737	1,055	136,607
1997	62	7,172	671	59,012	384	43,970	995	116,957
1998	103	63,478	663	43,136	340	319,619	1,287	139,680
1999	86	24,590	649	34,989	476	158,287	1,111	96,005
2000	77	139,497	536	35,219	463	165,295	1,196	112,154
2001	94	168,140	447	33,267	613	118,392	1,330	190,366
2002	64	26,730	395	382,216	300	13,253	1,133	185,477
Total	573	464,699	4,024	659,812	3,027	841,553	8,107	977,246

Number of Spills by Cause



Gallons Spilled by Cause



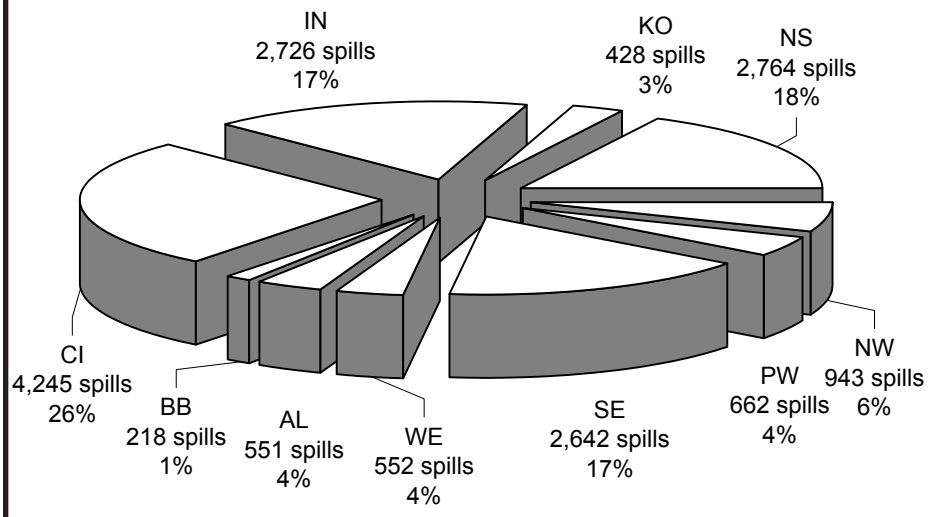
- Structural/Mechanical causes accounted for over 50% of the total spills over this seven-year period, with an average of 121 gallons per spill.
- Spills caused by "Accidents" were largest in volume, averaging 810 gallons per spill.
- Largest Spill from a Structural/ Mechanical cause: 100,000 gallons of jet fuel jettisoned from a military aircraft (June 23, 2002, Interior Alaska)
- Largest Spill caused by an Accident: 220,000 pounds of Urea (January 1997, Cook Inlet)
- Largest Spill caused by Human Factors: 285,600 gallons of crude oil (TAPS pipeline, October 2001, Interior Alaska)

Spills by Subarea *(excluding Process Water)*

Cumulative Total (FY96-02)

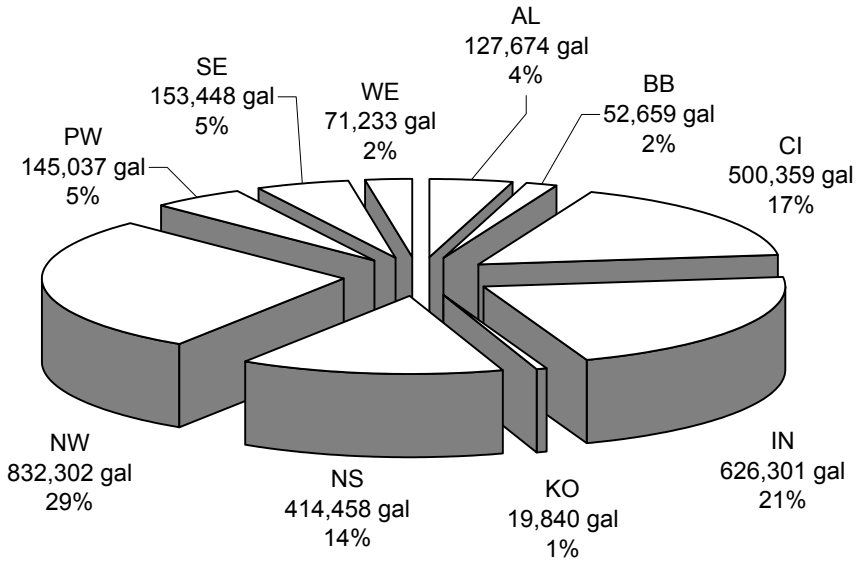
Subarea	*Number of Spills*	*Gallons Released*
Aleutian (AL)	551	127,674
Bristol Bay (BB)	218	52,659
Cook Inlet (CI)	4,245	500,359
Interior Alaska (IN)	2,726	626,301
Kodiak Island (KO)	428	19,840
North Slope (NS)	2,764	414,458
Northwest Arctic (NW)	943	832,302
Prince William Sound (PW)	662	145,037
Southeast Alaska (SE)	2,642	153,448
Western Alaska (WE)	552	71,233
Total	15,731	2,943,310

Number of Spills by Subarea



- The greatest number of spills occurred in the Cook Inlet subarea (26%)
- The more highly populated or industrialized subareas experienced more spills than other subareas.
- Although only 6% of the total spills reported statewide occurred in the Northwest Arctic subarea, this subarea averaged the highest (29%) volume spilled at 883 gallons per incident.

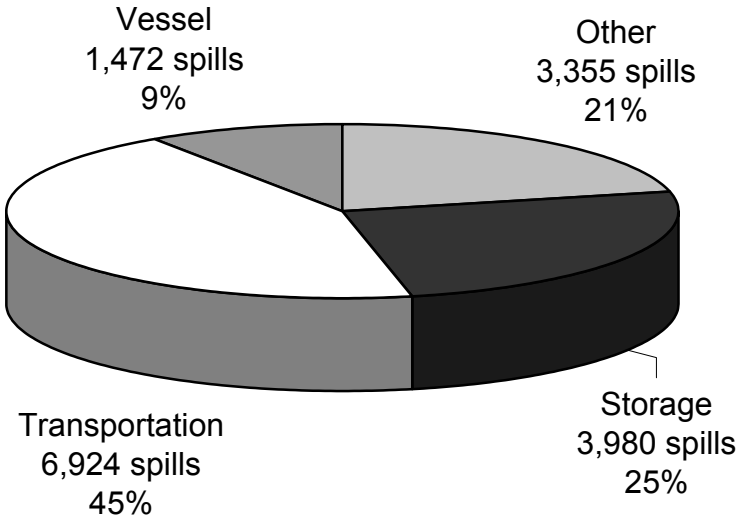
Gallons Spilled by Subarea



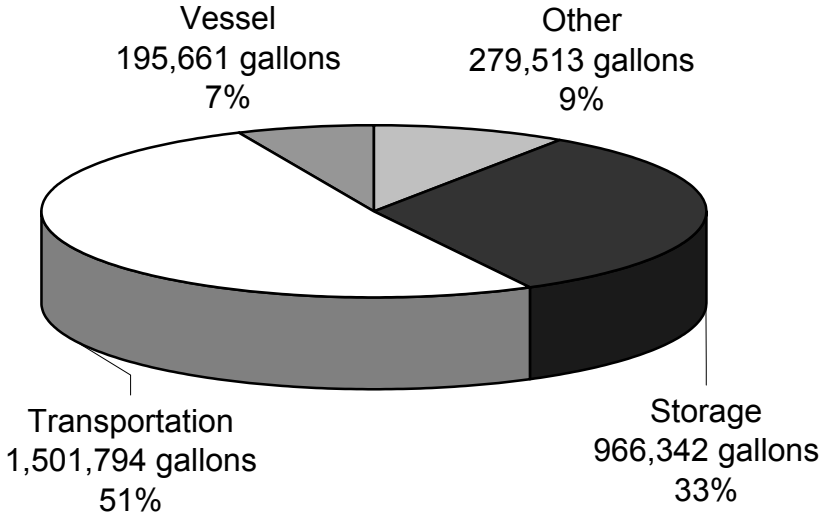
Spills by Facility Type *(excluding Process Water)*

	Facility							
	Other		Storage		Transportation		Vessel	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	551	40,986	499	75,583	981	108,498	225	41,342
1997	475	31,795	480	95,288	915	81,999	242	18,029
1998	482	49,196	463	298,370	1,182	167,708	266	50,639
1999	491	21,744	524	205,771	1,001	70,099	306	16,257
2000	470	54,891	567	145,506	1,052	240,019	183	11,749
2001	570	49,518	724	77,116	1,045	369,144	145	14,387
2002	316	31,383	723	68,708	748	464,327	105	43,258
Total	3,355	279,513	3,980	966,342	6,924	1,501,794	1,472	195,661

Number of Spills by Facility Type



Gallons Spilled by Facility Type

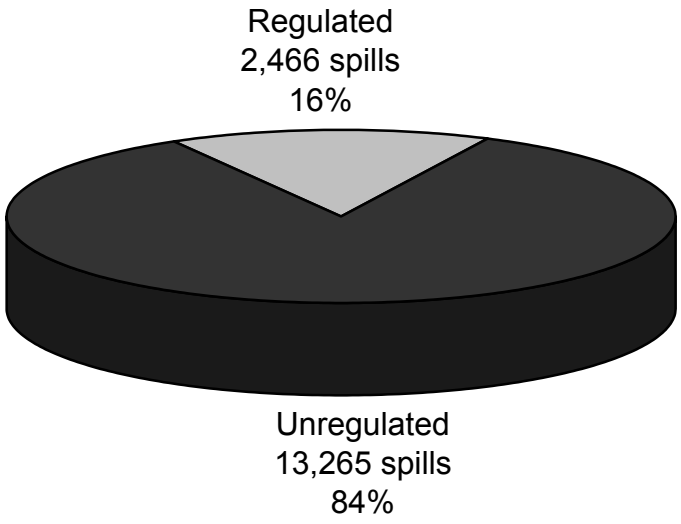


- No noticeable trends.
- Vessels accounted for the least number (9%) of spills and the least amount of product spilled (7%, or approximately 133 gallons per incident)
- Transportation was the single largest source for spills, with an average of 217 gallons per incident.
- Largest Spill from a Vessel: 220,000 pounds of Urea (January 1997, Cook Inlet)
- Largest Spill from a Storage Tank: 200,000 gallons of magnesium oxide (mining operation, May 1998, Northwest Arctic)
- Largest Spill from Transportation: 285,600 gallons (crude oil, TAPS pipeline, October 2001, Interior Alaska)

Regulated and Unregulated Facilities *(excluding Process Water)*

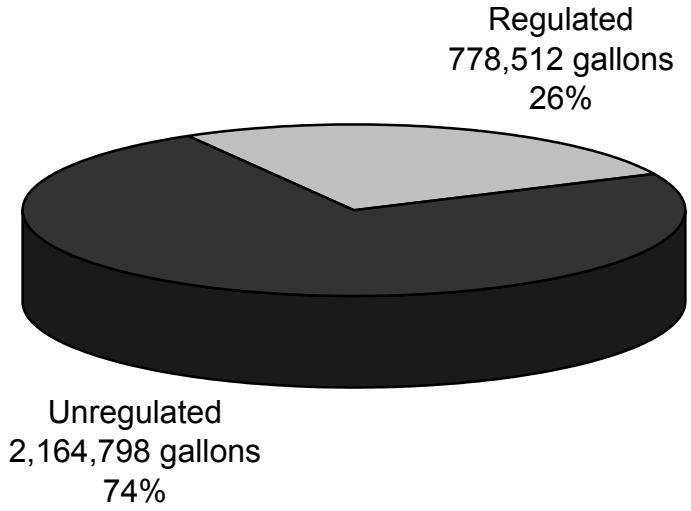
	Regulated		Unregulated	
Fiscal Year	Total Spills	Quantity (gallons)	Total Spills	Quantity (gallons)
1996	319	70,797	1,937	195,612
1997	368	79,737	1,744	147,374
1998	487	46,992	1,906	518,921
1999	313	43,875	2,009	269,996
2000	286	61,100	1,986	391,065
2001	280	147,953	2,204	362,212
2002	413	328,058	1,479	279,618
Total	2,466	778,512	13,265	2,164,798
Average	352	111,216	1,895	309,257

Number of Spills from Regulated and Unregulated Facilities



- Each year, an average of 352 spills (16%) and 111,216 gallons (28%) of oil and hazardous substances (excluding process water) occur from facilities regulated by the State.
- Spills from unregulated facilities were five times more frequent than spills at regulated facilities.

Gallons Spilled from Regulated and Unregulated Facilities



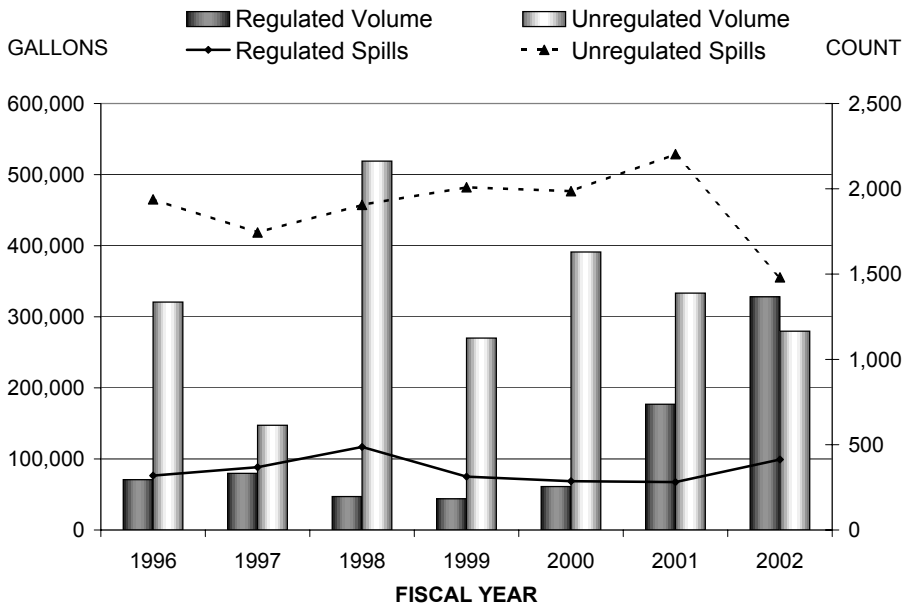
- The total volume of oil and hazardous substances spilled from unregulated facilities was nearly three times the amount spilled from regulated facilities.

B. Regulated vs. Unregulated Facilities

- The following tables and charts provide a comparative summary of spills from regulated versus unregulated activities in the State of Alaska. As previously stated in this report, these statistics do not include spills reported in pounds, potential spills or process water spills.

	Regulated		Unregulated	
Fiscal Year	Total Spills	Quantity (gallons)	Total Spills	Quantity (gallons)
1996	319	70,797	1,937	195,612
1997	368	79,737	1,744	147,374
1998	487	46,992	1,906	518,921
1999	313	43,875	2,009	269,996
2000	286	61,100	1,986	391,065
2001	280	147,953	2,204	362,212
2002	413	328,058	1,479	279,618
Total	2,466	778,512	13,265	2,164,798
Average	352	111,216	1,895	309,257

- Spills from regulated activities are fairly constant in terms of average per year. The same general conclusion can be applied to the average number of spills from unregulated activities.
- The most prominent conclusion to be discerned from the data is that spills from regulated activities occur much less frequently (16%) than spills from unregulated activities (84%).
- The total volume of product spilled from unregulated activities (2,164,798 gallons) far exceeds the total volume (778,512 gallons) from regulated activities. With the exception of fiscal year 2002, the spill volume from unregulated facilities exceeded that from regulated facilities. The average spill volume per spill incident for regulated facilities was 316 gallons as compared to 163 gallons for unregulated facilities.



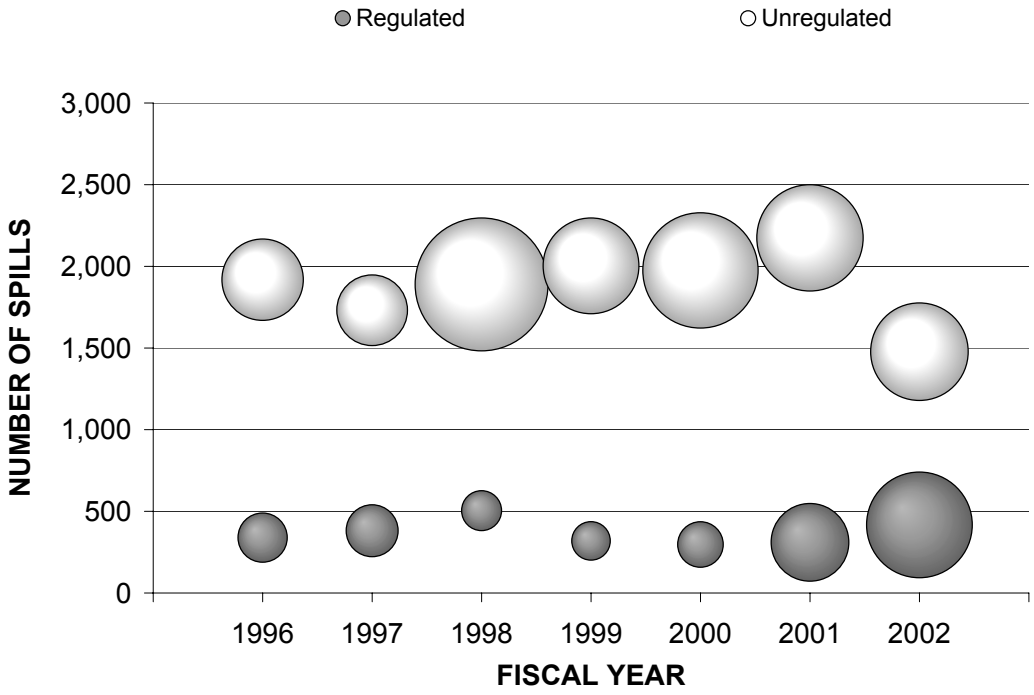
Unregulated Activities

- Spills from vehicles (includes passenger vehicles, commercial vehicles, tanker trucks, etc.) were the most common in terms of frequency with an average of 567 spills per year (for an average of 86 gallons per incident). The daily average for vehicle spills is 1.6 per day and 130 gallons per day. Accidents are the leading cause of vehicle spills.
- Gas station spills averaged 212 per year with 20 gallons per incident. Structural/Mechanical and Human Factors are the primary cause of spills at gas stations.
- Spills from vessels average 190 per year with a loss of 136 gallons per incident statewide. Accidents and Human Factors are the primary cause of vessel spills.

- Air transportation averaged 144 spills per year with 179 gallons per incident.
- Log Processing averaged 11 spills per year with 1,681 gallons per incident.
- Railroad Operations averaged 15 spills per year with 1,517 gallons per incident.
- Mining Operations averaged 68 spills per year with 903 gallons per incident.
- Transmission pipelines (unregulated piping systems) averaged 24 spills per year with 832 gallons per incident
- Spills at private residences averaged 86 spills per year with 116 gallons per incident. Home heating oil systems are the primary source of private residence spills.
- Power generation facilities averaged 23 spills per year with 257 gallons per incident.

Regulated Activities

- Amongst the regulated activities, "Oil Exploration and Production" facilities accounted for approximately 57% of the total number of spills, and approximately 29% of the total volume spilled.
- Refinery operations (15%) and transmission pipelines (15%) were the next two highest in terms of total spill count.
- Spills from regulated transmission pipelines averaged 1,260 gallons per incident, although the TAPS bullet hole incident accounted for 285,600 gallons (or roughly 61%) of the total volume spilled over this seven-year period.
- Tanker vessel spills constituted only 2% of the total number of incidents, and averaged 19 gallons per spill.
- Oil Terminal spills constituted 8% of the total number of incidents, and 6% of the total volume.



This bubble graph illustrates the number and total volume of spills reported from regulated and unregulated facilities. The size of the bubble is proportional to the total volume spilled for a given fiscal year. The vertical position of the bubble indicates the number of spills for the fiscal year.

Spills from Unregulated Facilities

	1996		1997		1998		1999		2000		2001		2002		Cumulative Total	
FacilityType	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
Air Transportation	170	7,102	143	13,959	189	3,982	159	7,081	138	7,767	100	15,595	113	125,694	1,012	181,180
Cannery	18	12,031	13	1,220	14	3,718	17	2,089	11	2,992	3	33	7	1,667	83	23,750
Drug Lab	1	1			2	6									3	7
Farm/Aquaculture													1	1	1	1
Gas Station	201	4,223	149	2,587	81	3,756	141	3,004	263	3,058	446	11,628	203	1,293	1,484	29,549
Harbor/Port	2	31	1	20	2	16	7	31	1	10	2	35	20	92	35	235
Landfill/Dump													7	268	7	268
Laundry Service	3	550			1	1,500	3	445	3	1,164			1	30	11	3,689
Log Processing	12	125,915	38	8,336	2	20	5	104	1	20	4	33	18	84	80	134,512
Logging Operation	2	35	2	80			1	5	1	5	7	368	41	215	54	708
Maintenance Yard/Shop	3	185	1	20	6	106	5	442	3	59	2	50	26	3,360	46	4,222
Mining Operation	20	11,439	39	2,457	78	248,381	54	124,342	35	9,486	39	27,854	217	11,471	482	435,430
Oil Terminal Facility	47	24,083	56	43,294	64	28,065	52	35,416	54	94,808	50	9,440	27	7,214	350	242,320
Other	317	26,277	283	27,728	293	34,551	301	16,380	266	45,411	345	30,678	210	29,972	2,015	210,997
Power Generation	20	7,350	28	5,981	25	3,474	27	3,791	31	12,863	6	875	23	6,853	160	41,187
Railroad Operation	12	221	12	1,256	21	353	26	1,439	14	155,292	6	1,735	16	2,058	107	162,354
Refinery Operation	8	903	7	85	9	271	5	6,804	1	150			4	696	34	8,909
Residence	71	9,230	74	8,917	55	6,231	103	11,786	100	11,908	118	13,871	85	8,372	606	70,315
Salvage/Wrecking Yard													1	1	1	1
School	2	105			2	115	2	50	5	556	1	10	16	5,855	28	6,691
Telecommunications							2	371	1	10			1	5	4	386
Transmission Pipeline	47	11,756	26	2,266	14	100,849	22	11,005	19	5,697	23	5,515	15	1,033	166	138,121
Unknown	209	4,120	153	2,636	150	3,970	172	2,800	187	3,182	201	18,617	91	1,068	1,163	36,393
Vehicle	570	33,610	497	16,662	658	29,781	626	26,881	670	23,551	712	183,458	236	28,093	3,969	342,036
Vessel	200	40,925	220	9,160	236	49,414	276	15,314	168	11,401	134	11,362	98	43,199	1,332	180,775
Water/Wastewater Facility	3	520	2	710	4	362	3	416	14	1,675	4	2,055	4	1,111	34	6,849
Total	1,938	320,612	1,744	147,374	1,906	518,921	2,009	269,996	1,986	391,065	2,203	333,212	1,481	279,703	13,267	2,260,883

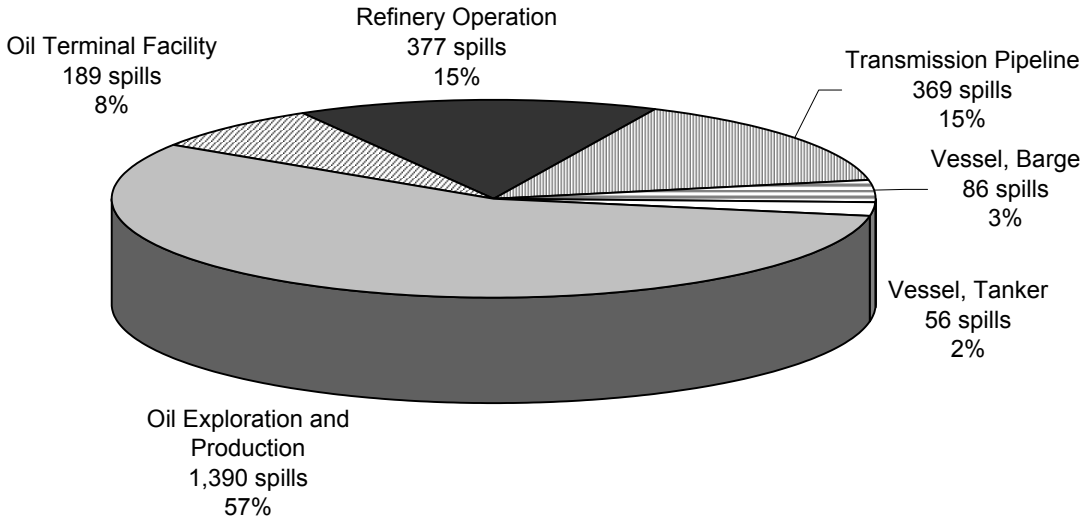
Spills from Regulated Facilities by Facility Type

The data below excludes process water spills, spills reported in pounds and potential spills

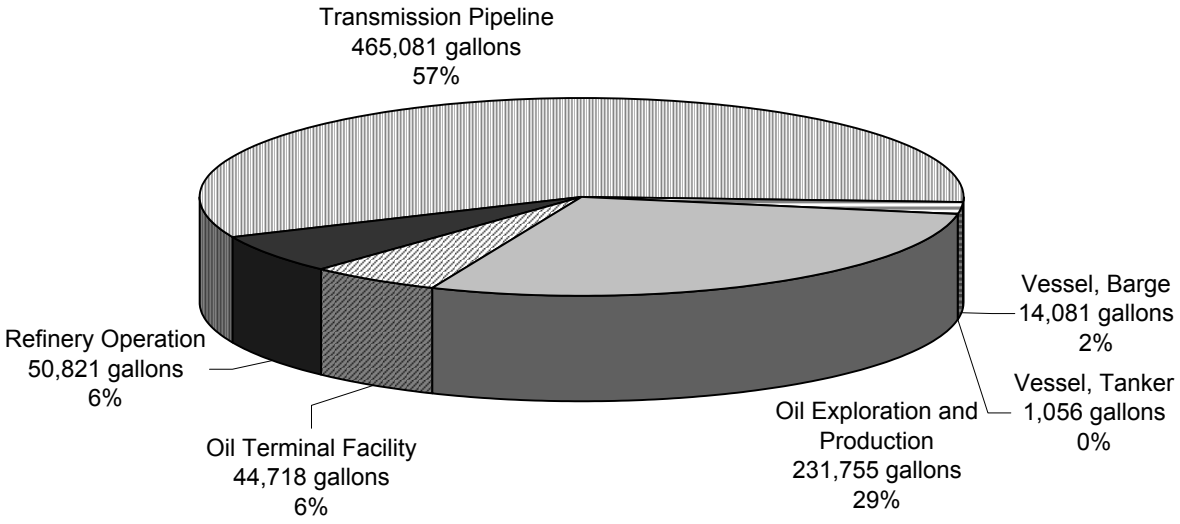
	Fiscal Year															
	1996		1997		1998		1999		2000		2001		2002		Cumulative Total	
Facility Type	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production	136	17,937	195	39,903	262	28,294	113	14,104	187	45,667	170	65,321	327	20,529	1,390	231,755
Oil Terminal Facility	19	4,333	20	4,776	32	827	51	12,367	22	2,495	23	6,687	22	13,233	189	44,718
Refinery Operation	74	9,683	62	17,325	98	3,594	59	4,354	28	4,291	27	4,239	29	7,335	377	50,821
Transmission Pipeline	65	38,427	69	8,864	65	13,052	59	11,857	34	8,299	50	97,681	27	286,901	369	465,081
Vessel, Barge	13	355	15	8,860	18	1,185	17	468	11	143	8	3,013	4	57	86	14,081
Vessel, Tanker	12	62	7	9	12	40	14	725	4	205	3	12	4	3	56	1,056
Total	319	70,797	368	79,737	487	46,992	313	43,875	286	61,100	281	176,953	413	328,058	2,467	807,512

Spills from Regulated Facilities by Facility Type *(excluding Process Water)*

Number of Spills by Regulated Facility Type



Gallons Spilled by Regulated Facility Type



Spills from Regulated Facilities -- Other Causes

Facility	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
	count	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)	35	1,024	40	6,059	29	7,699	23	2,869	36	37,089	45	39,433	42	2,232	250	96,405
Oil Terminal Facility (TERM)	3	62	5	354	1	1	8	95	5	21	11	944	1	20	34	1,497
Refinery Operation (REF)	11	352	9	909	8	318	10	591	5	3,537	8	1,373	3	255	54	7,335
Transmission Pipeline (PIPE)	15	714	16	235	15	81	13	7,328	12	2,706	9	11,599	4	436	84	23,099
Vessel, Barge (BAR)	5	54	1	10			1	1	1	2	4	3,004			12	3,071
Vessel, Tanker (TANK)	4	4			4	4	4	272	1	1	1	1	2	2	16	284
Total	73	2,210	71	7,567	57	8,103	59	11,156	60	43,356	78	56,354	52	2,945	450	131,691

Spills from Regulated Facilities -- Human Factors Causes

Facility	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
	count	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)	28	6,320	48	2,408	52	5,148	30	2,181	36	2,180	26	2,546	62	6,149	282	26,932
Oil Terminal Facility (TERM)	8	3,941	5	2,780	10	404	13	10,283	4	1,182	3	1,708	4	212	47	20,510
Refinery Operation (REF)	16	7,262	8	923	25	962	13	77	2	16	9	1,763	9	2,105	82	13,108
Transmission Pipeline (PIPE)	9	777	13	332	8	814	3	49	8	263	4	242	2	285,603	47	288,080
Vessel, Barge (BAR)	2	12	4	186	9	133	8	400	2	76	1	1	1	1	27	809
Vessel, Tanker (TANK)	1	1	2	4	3	3	3	3	2	201					11	212
Total	64	18,313	80	6,633	107	7,464	70	12,993	54	3,918	43	6,260	78	294,070	496	349,651

Spills from Regulated Facilities -- Structural/Mechanical Causes

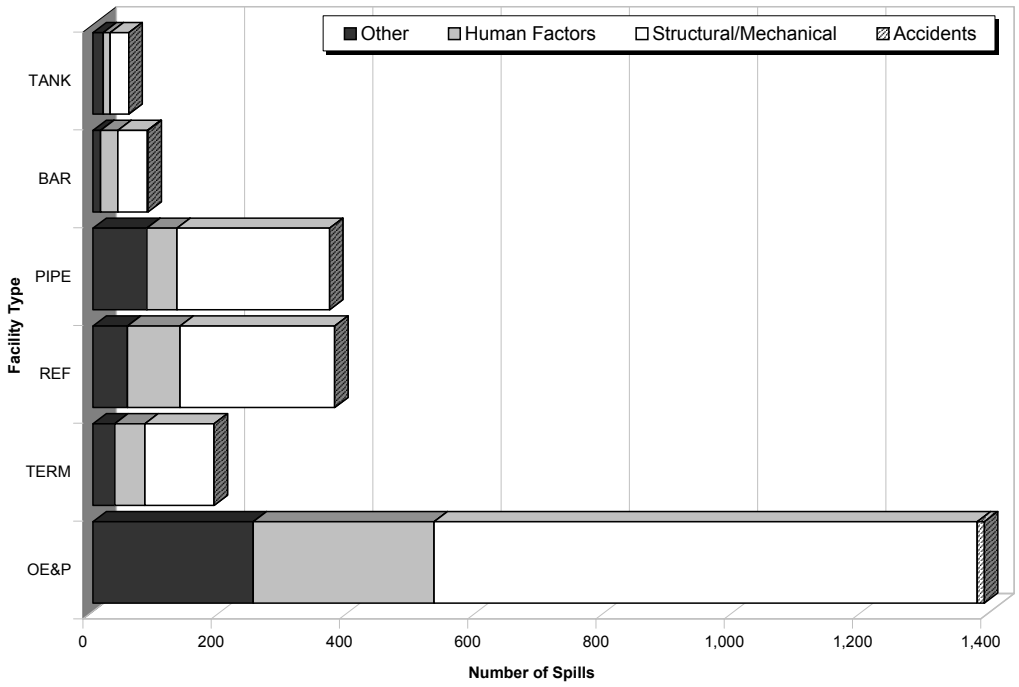
Facility	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
	count	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)	73	10,593	107	31,436	178	15,406	59	9,052	115	6,398	99	23,342	216	11,491	847	107,718
Oil Terminal Facility (TERM)	8	330	10	1,642	21	422	30	1,989	13	1,292	9	4,035	17	13,001	108	22,711
Refinery Operation (REF)	47	2,069	45	15,493	65	2,314	36	3,686	21	738	10	1,103	17	4,975	241	30,378
Transmission Pipeline (PIPE)	41	36,936	40	8,297	42	12,157	43	4,480	14	5,330	37	85,840	21	862	238	153,902
Vessel, Barge (BAR)	6	289	10	8,664	9	1,052	7	66	8	65	3	8	3	56	46	10,200
Vessel, Tanker (TANK)	7	57	5	5	5	33	7	450	1	3	2	11	2	1	29	560
Total	182	50,274	217	65,537	320	31,384	182	19,723	172	13,826	160	114,339	276	30,386	1,509	325,469

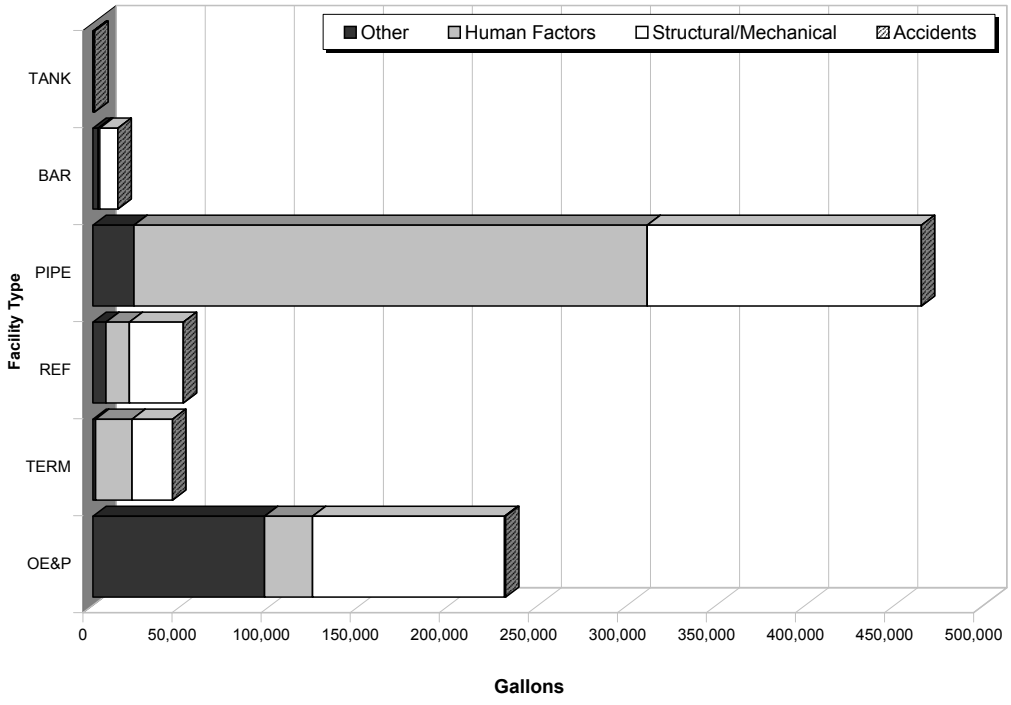
Spills from Regulated Facilities -- Accidents

Facility	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
	count	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)					3	41	1	2	7	657					11	700
Oil Terminal Facility (TERM)															0	0
Refinery Operation (REF)															0	0
Transmission Pipeline (PIPE)															0	0
Vessel, Barge (BAR)							1	1							1	1
Vessel, Tanker (TANK)															0	0
Total	0	0	0	0	3	41	2	3	7	657	0	0	0	0	12	701

Total	2,467	807,512

Spills from Regulated Facilities by Cause *(excluding Process Water)*





Spills from Regulated Facilities -- <10 gallons

	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
Facility	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)	71	190	98	309	137	380	56	156	114	312	81	278	183	477	740	2,102
Oil Terminal Facility (TERM)	12	36	7	21	19	50	29	77	13	25	10	29	16	48	106	286
Refinery Operation (REF)	35	73	24	61	49	141	28	96	7	14	10	33	12	53	165	471
Transmission Pipeline (PIPE)	31	98	43	103	33	74	31	95	15	48	11	34	12	23	176	475
Vessel, Barge (BAR)	8	10	6	15	6	11	10	18	8	13	7	13	2	2	47	82
Vessel, Tanker (TANK)	10	10	7	9	10	10	10	15	3	5	2	2	4	3	46	54
Total	167	417	185	518	254	666	164	457	160	417	121	389	229	606	1,280	3,470

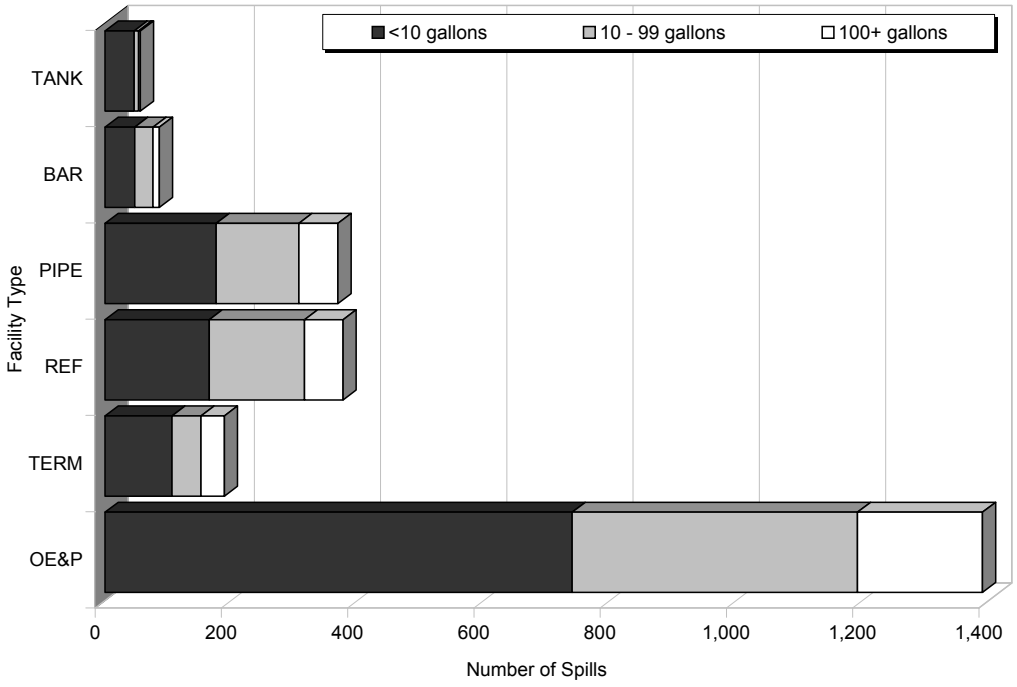
Spills from Regulated Facilities -- 10 to 99 gallons

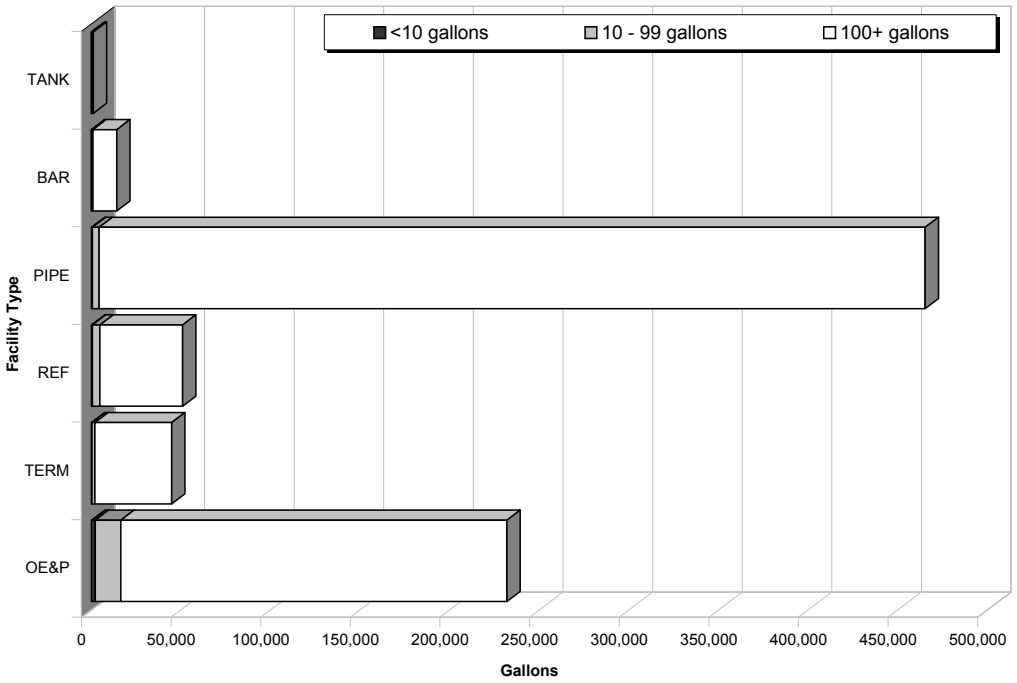
	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
Facility	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)	50	1,626	67	2,229	86	2,712	39	940	48	1,517	64	2,065	98	3,148	452	14,237
Oil Terminal Facility (TERM)	3	165	7	215	10	427	12	369	7	270	5	162	2	60	46	1,668
Refinery Operation (REF)	29	790	25	650	38	1,247	24	570	17	477	8	198	10	315	151	4,247
Transmission Pipeline (PIPE)	21	615	19	615	21	515	19	577	13	402	27	897	11	208	131	3,829
Vessel, Barge (BAR)	4	95	6	95	9	229	5	140	3	130			2	55	29	744
Vessel, Tanker (TANK)	2	52			2	30	2	40			1	10			7	132
Total	109	3,343	124	3,804	166	5,160	101	2,636	88	2,796	105	3,332	123	3,786	816	24,857

Spills from Regulated Facilities -- 100 gallons or more

	FY 1996		FY 1997		FY 1998		FY 1999		FY 2000		FY 2001		FY 2002		Cumulative Total	
Facility	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
Oil Exploration and Production (OE&P)	15	16,121	30	37,365	39	25,202	18	13,008	25	43,838	25	62,978	46	16,904	198	215,416
Oil Terminal Facility (TERM)	4	4,132	6	4,540	3	350	10	11,921	2	2,200	8	6,496	4	13,125	37	42,764
Refinery Operation (REF)	10	8,820	13	16,614	11	2,206	7	3,688	4	3,800	9	4,008	7	6,967	61	46,103
Transmission Pipeline (PIPE)	13	37,714	7	8,146	11	12,463	9	11,185	6	7,849	12	96,750	4	286,670	62	460,777
Vessel, Barge (BAR)	1	250	3	8,750	3	945	2	310			1	3,000			10	13,255
Vessel, Tanker (TANK)							2	670	1	200					3	870
Total	43	67,037	59	75,415	67	41,166	48	40,782	38	57,887	55	173,232	61	323,666	371	779,185

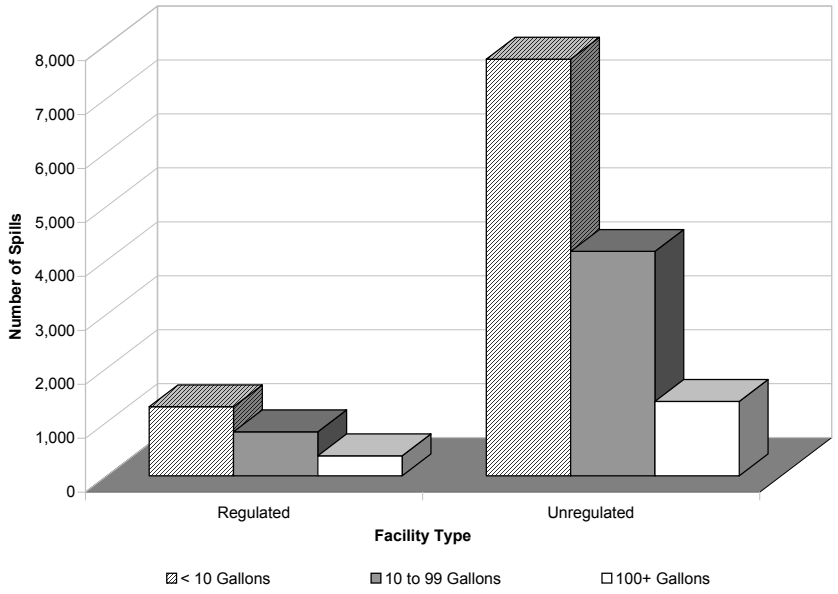
Spills from Regulated Facilities by Size Class *(excluding Process Water)*

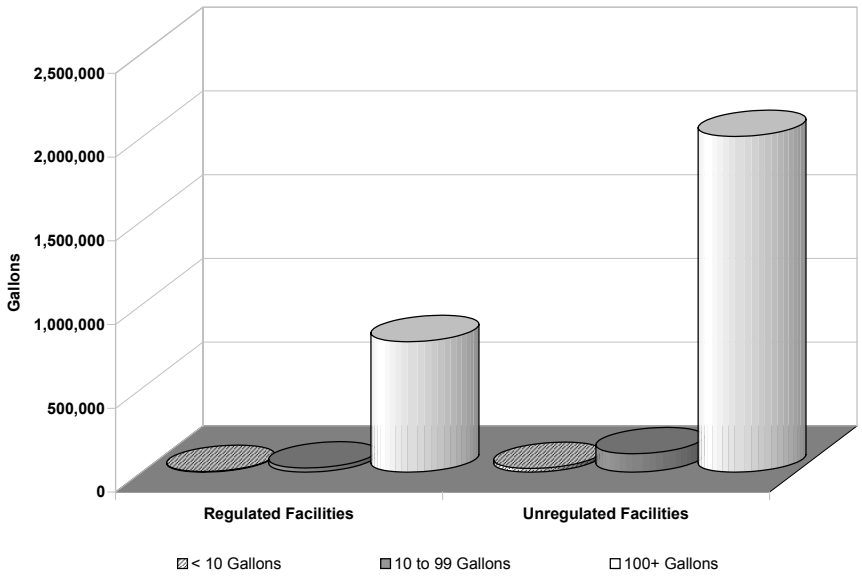




Spill Size -- Regulated vs. Unregulated *(excluding Process Water)*

	< 10 Gallons				10 to 99 Gallons				100+ Gallons			
	Regulated		Unregulated		Regulated		Unregulated		Regulated		Unregulated	
Fiscal Year	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	167	417	1,130	3,045	109	3,343	614	15,931	43	67,037	193	176,636
1997	185	518	962	2,813	124	3,804	576	14,893	59	75,415	206	129,668
1998	254	666	1,071	2,983	166	5,160	656	16,781	67	41,166	179	499,157
1999	164	457	1,182	3,337	101	2,636	612	16,543	48	40,782	215	250,116
2000	160	417	1,172	3,275	88	2,796	598	16,587	38	57,887	216	371,203
2001	121	389	1,360	3,922	105	3,332	639	17,253	55	173,232	204	312,037
2002	229	606	847	2,346	123	3,786	465	11,843	61	323,666	167	265,428
Total	1,280	3,470	7,724	21,721	816	24,857	4,160	109,831	371	779,185	1,380	2,004,245
Average	183	496	1,103	3,103	117	3,551	594	15,690	53	111,312	197	286,321





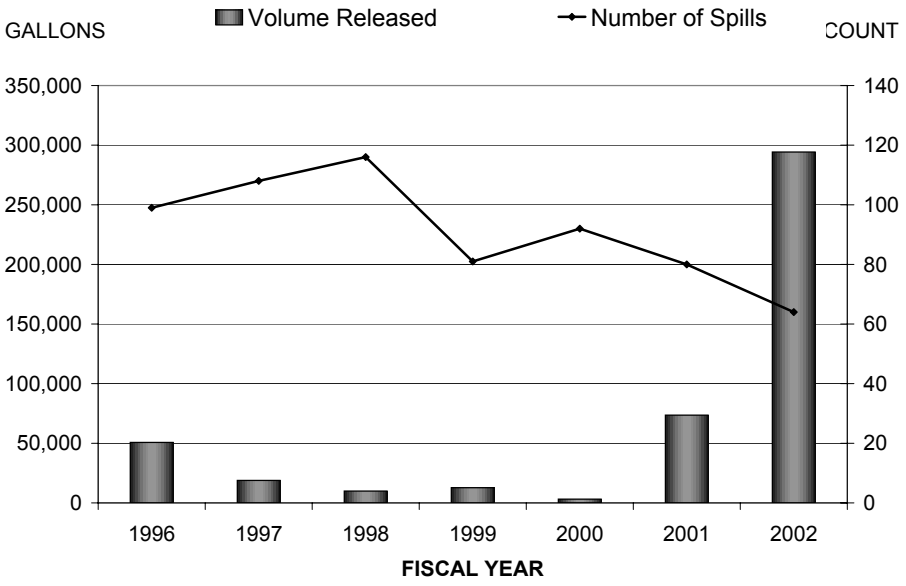
Section II: Spills by Substance

A. Crude Oil

Number of Crude Oil Spills and Total Volume Spilled

Fiscal Year	Total Spills	Total Quantity Released (gallons)
1996	99	50,750
1997	108	18,873
1998	116	9,905
1999	81	12,770
2000	92	3,156
2001	80	73,625
2002	64	294,218
Total	640	463,297
Average	91	66,185

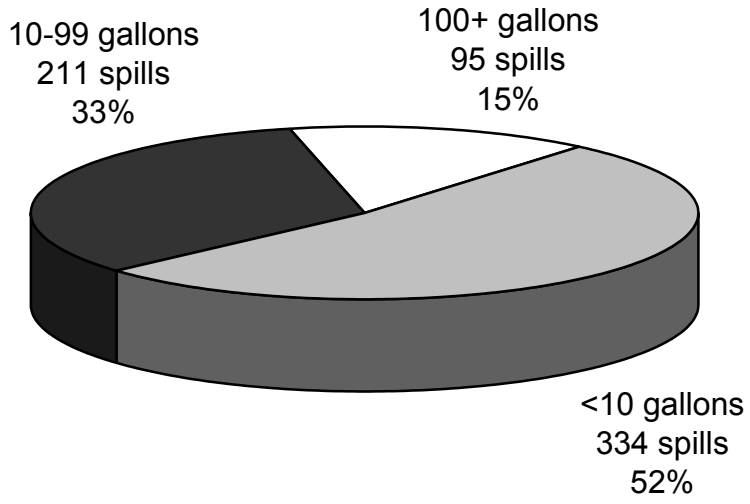
- Crude oil spills occurred only at State-regulated facilities.
- Largest crude oil spill during this reporting period: TransAlaska Pipeline Bullet Hole incident on October 4, 2001, with 285,600 gallons of crude oil spilled.
- Crude oil spills accounted for only 4% of the total spills and 16% of the total volume spilled during this seven year period.
- Crude oil spills averaged 727 gallons per incident.



Crude Oil Spills by Size Class

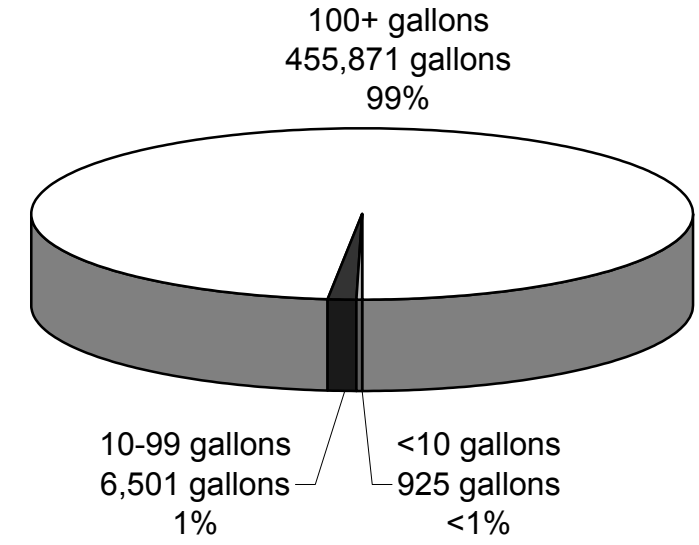
	Spill Size							
	<10 gallons		10-99 gallons		100+ gallons		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	58	147	27	846	14	49,757	99	50,750
1997	44	120	45	1,441	19	17,312	108	18,873
1998	61	167	38	1,175	17	8,563	116	9,905
1999	45	134	25	790	11	11,846	81	12,770
2000	56	145	28	622	8	2,389	92	3,156
2001	41	139	23	669	16	72,817	80	73,625
2002	29	73	25	958	10	293,187	64	294,218
Total	334	925	211	6,501	95	455,871	640	463,297

Number of Spills by Spill Size



- The majority of crude oil spills are less than 10 gallons in size.
- 95 spills (or 15% of the 640 crude oil spills) resulted in 99% of the total volume spilled.

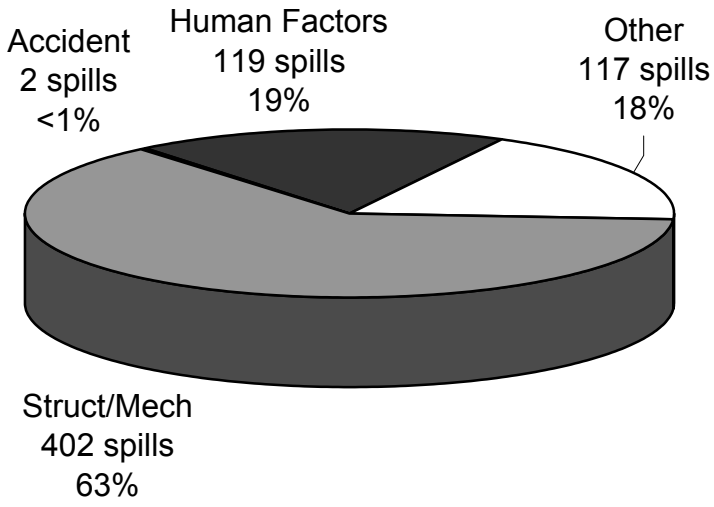
Gallons Spilled by Spill Size



Crude Oil Spills by Cause

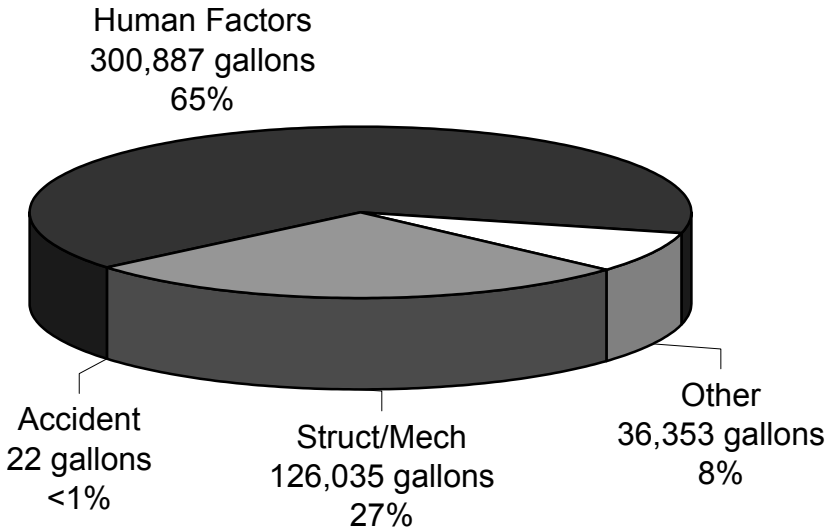
	Cause									
	Accident		Human Factors		Other		Struct/Mech		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996			22	7,849	21	498	56	42,403	99	50,750
1997			29	1,433	23	1,372	56	16,068	108	18,873
1998	1	20	25	1,771	12	1,888	78	6,226	116	9,905
1999	1	2	13	246	11	382	56	12,140	81	12,770
2000			10	272	21	353	61	2,531	92	3,156
2001			6	1,186	21	31,227	53	41,212	80	73,625
2002			14	288,130	8	633	42	5,455	64	294,218
Total	2	22	119	300,887	117	36,353	402	126,035	640	463,297

Number of Spills by Cause



- Structural/Mechanical was the primary cause of 63% of the crude oil spills, with an average of 314 gallons per spill.
- Human Factors causes (including the October 2001 TAPS Bullet Hole incident) accounted for 65% of the total volume spilled.

Gallons Spilled by Cause

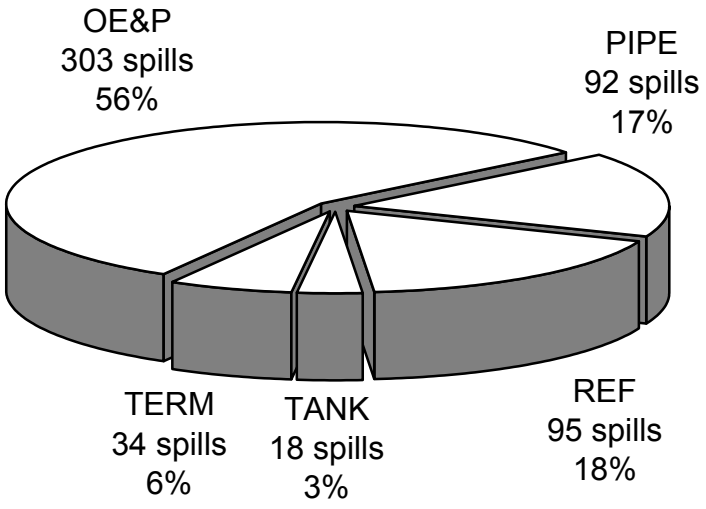


Crude Oil Spills at Regulated Facilities

	OE&P		PIPE		REF		TANK		TERM		TOTAL	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	34	7,268	15	34,803	25	8,100	4	45	2	10	80	50,226
1997	54	4,360	18	7,652	16	6,682	2	4	5	125	95	18,823
1998	60	5,817	14	3,721	17	228	4	4	4	26	99	9,796
1999	27	8,367	12	160	22	3,000	3	671	11	507	75	12,705
2000	56	2,653	12	315	8	70	1	3	5	20	82	3,061
2001	26	31,563	13	38,966	4	235	3	12	5	1,751	51	72,527
2002	46	4,528	8	286,056	3	3,575	1	1	2	10	60	294,170
Total	303	64,556	92	371,673	95	21,890	18	740	34	2,449	542	461,308

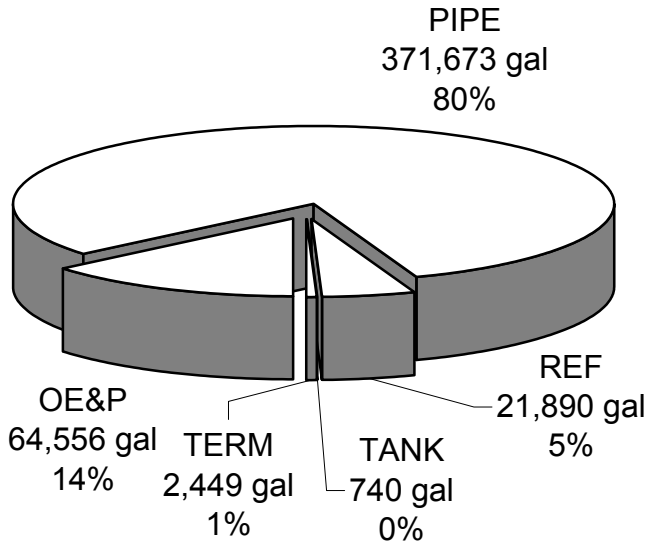
NOTE: OE&P - Oil Exploration and Production Facilities; PIPE - Transmission Pipelines; REF - Refineries; TANK - Tanker Vessels; TERM - Oil Terminal Facilities

Number of Spills by Facility Type



- Spills from tanker vessels were minimal (3%) and small in size, with an average of 41 gallons per spill.
- Spills from oil exploration and production accounted for the majority of the spills (56%)
- Pipelines averaged 3,997 gallons per spill (including the TAPS Bullet Hole Incident).

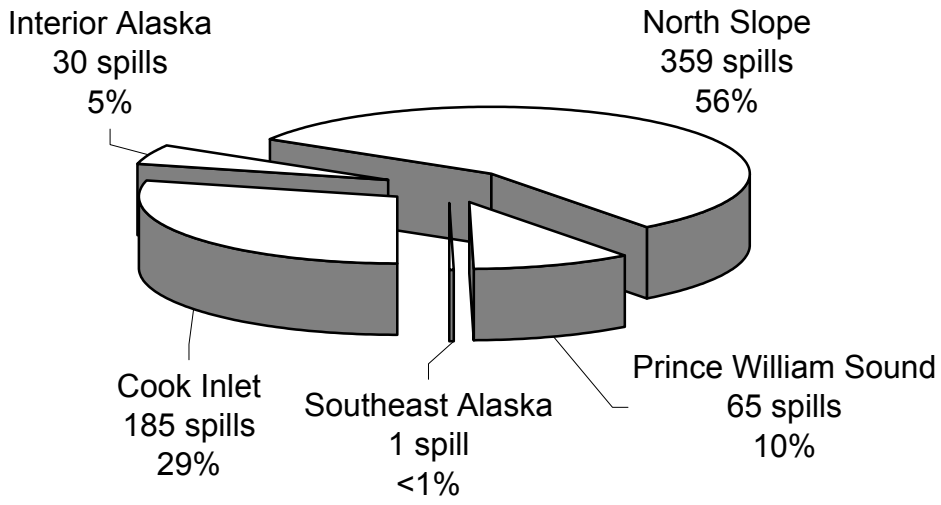
Gallons Spilled by Facility Type



Crude Oil Spills by Subarea

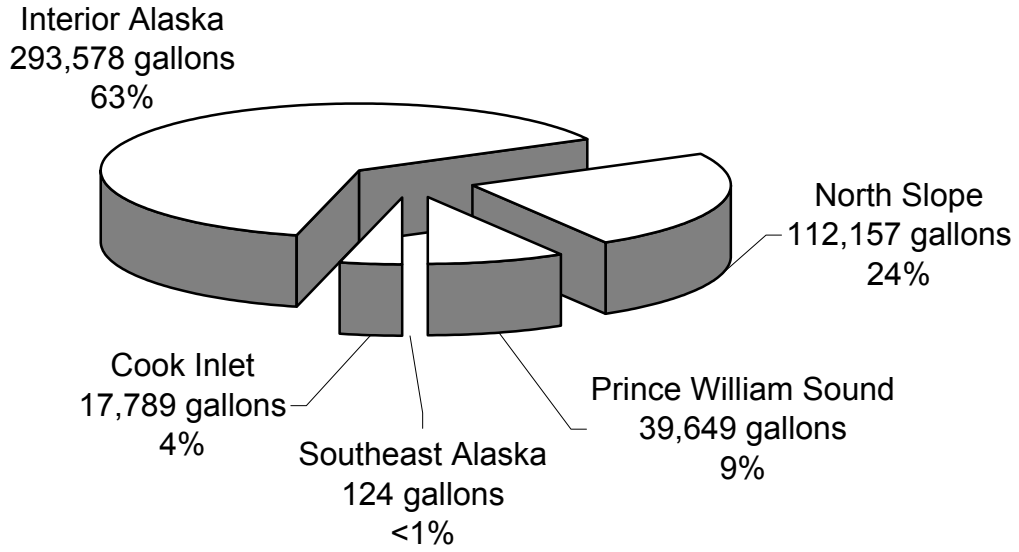
	Cumulative Totals, FY 96-02	
Subarea	*count*	*gallons*
Cook Inlet	185	17,789
Interior Alaska	30	293,578
North Slope	359	112,157
Prince William Sound	65	39,649
Southeast Alaska	1	124
Total	640	463,297

Number of Spills by Subarea



- While the North Slope subarea experienced the majority of crude oil spills, the Interior Alaska subarea accounted for the greatest volume (although 285,600 gallons were attributed to a single incident, i.e., the TAPS Bullet Hole incident).

Gallons Spilled by Subarea

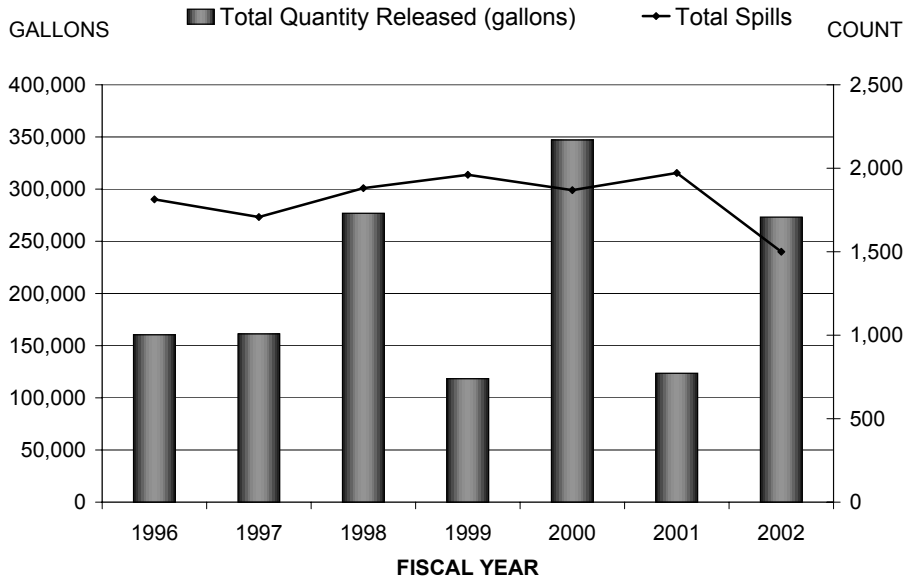


B. Noncrude Oil

Number of Noncrude Oil Spills and Total Volume Spilled

Fiscal Year	Total Spills	Total Quantity Released (gallons)
1996	1,814	160,367
1997	1,708	161,243
1998	1,881	276,831
1999	1,961	118,309
2000	1,869	347,095
2001	1,972	123,555
2002	1,500	273,187
Total	12,705	1,460,587
Average	1,815	208,655

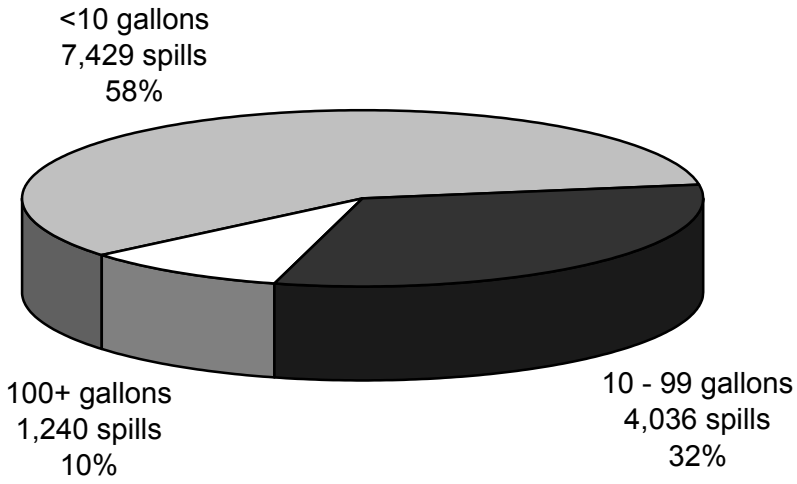
- Largest Noncrude Oil Spill: 120,516 gallons (train derailment, December 1999)
- Excluding process water, the number of noncrude oil spills accounted for the vast majority (81%) throughout the state.



Noncrude Oil Spills by Size Class

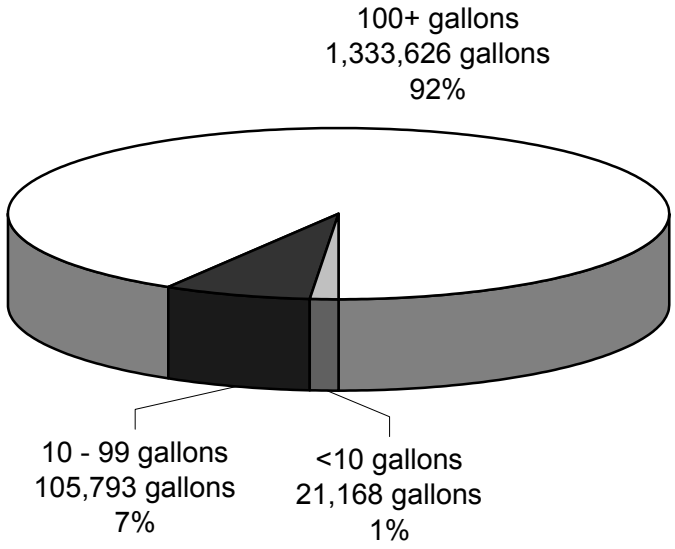
	Size Class							
	<10 gallons		10 - 99 gallons		100+ gallons		Total	
FY	count	gallons	count	gallons	count	gallons	count	gallons
1996	1,058	2,891	589	14,995	167	142,481	1,814	160,367
1997	945	2,823	569	14,678	194	143,742	1,708	161,243
1998	1,056	2,967	658	16,856	167	257,008	1,881	276,831
1999	1,165	3,286	601	15,844	195	99,179	1,961	118,309
2000	1,127	3,180	562	15,657	180	328,258	1,869	347,095
2001	1,200	3,490	595	15,983	177	104,082	1,972	123,555
2002	878	2,531	462	11,780	160	258,876	1,500	273,187
Total	7,429	21,168	4,036	105,793	1,240	1,333,626	12,705	1,460,587

Number of Spills by Spill Size



- No significant trends in the average size of noncrude oil spills.
- The majority of the spills (58%) are less than 10 gallons.
- Although spills > 100 gallons accounted for only 10% of the total spills, the volume of noncrude oil spilled from these spills accounted for 92% of the total volume spilled (1,333,626 gallons)

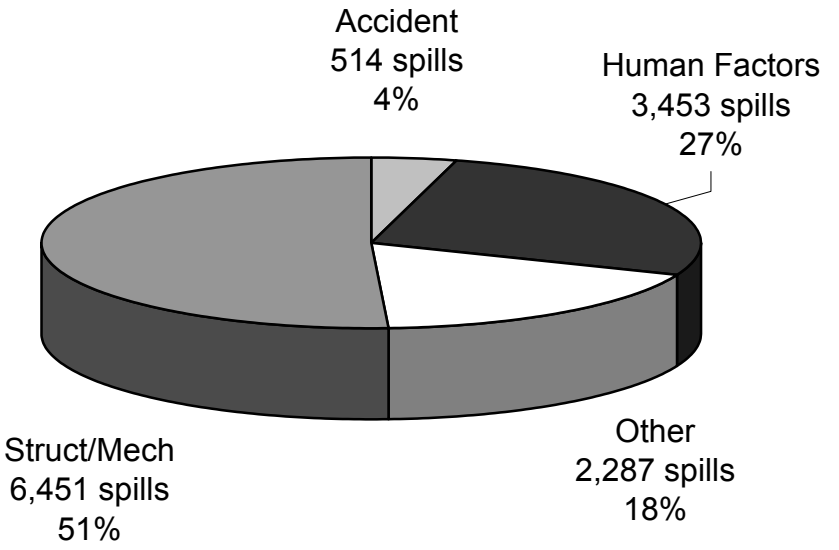
Gallons Spilled by Spill Size



Noncrude Oil Spills by Cause

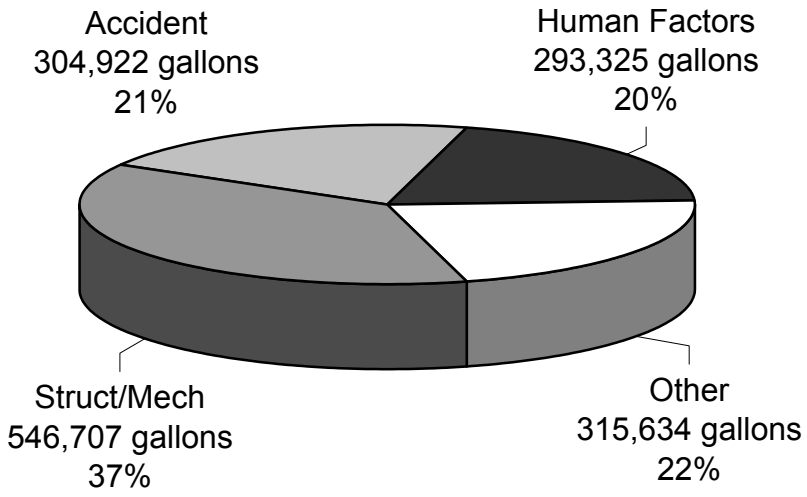
	Cause									
	Accident		Human Factors		Other		Struct/Mech		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	83	35,081	567	49,628	345	16,613	819	59,045	1,814	160,367
1997	59	7,125	584	49,503	295	34,610	770	70,005	1,708	161,243
1998	89	63,094	561	35,907	265	106,317	966	71,513	1,881	276,831
1999	79	20,294	583	32,367	386	11,641	913	54,007	1,961	118,309
2000	69	138,913	465	30,426	352	96,154	983	81,602	1,869	347,095
2001	83	16,062	377	19,063	418	39,776	1,094	48,654	1,972	123,555
2002	52	24,353	316	76,431	226	10,523	906	161,881	1,500	273,187
Total	514	304,922	3,453	293,325	2,287	315,634	6,451	546,707	12,705	1,460,587

Number of Spills by Cause



- No significant trends in the causes of noncrude oil spills.
- Accidents resulted in the largest average volume spilled, or 593 gallons per incident, followed by Other causes (138 gallons per spill incident).

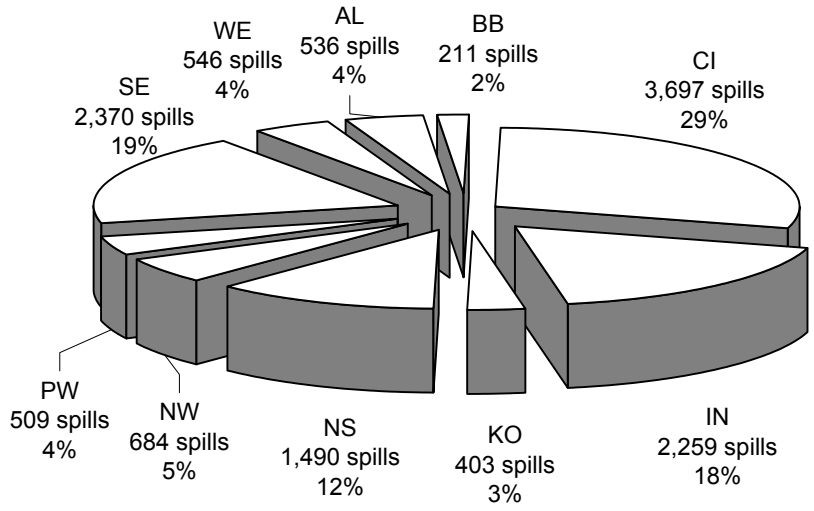
Gallons Spilled by Cause



Noncrude Oil Spills by Subarea

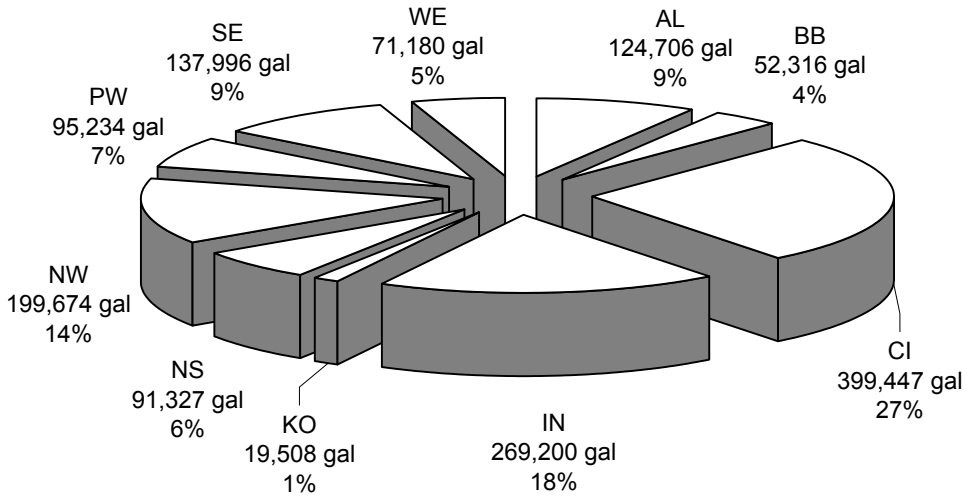
Subarea	Cumulative Totals, FY 96-02 count	gallons
Aleutian (AL)	536	124,706
Bristol Bay (BB)	211	52,316
Cook Inlet (CI)	3,697	399,447
Interior Alaska (IN)	2,259	269,200
Kodiak Island (KO)	403	19,508
North Slope (NS)	1,490	91,327
Northwest Arctic (NW)	684	199,674
Prince William Sound (PW)	509	95,234
Southeast Alaska (SE)	2,370	137,996
Western Alaska (WE)	546	71,180
Total	12,705	1,460,587

Number of Spills by Subarea



- Noncrude oil spills were more common in the more densely populated and industrialized subareas such as Cook Inlet, Southeast and Interior Alaska.

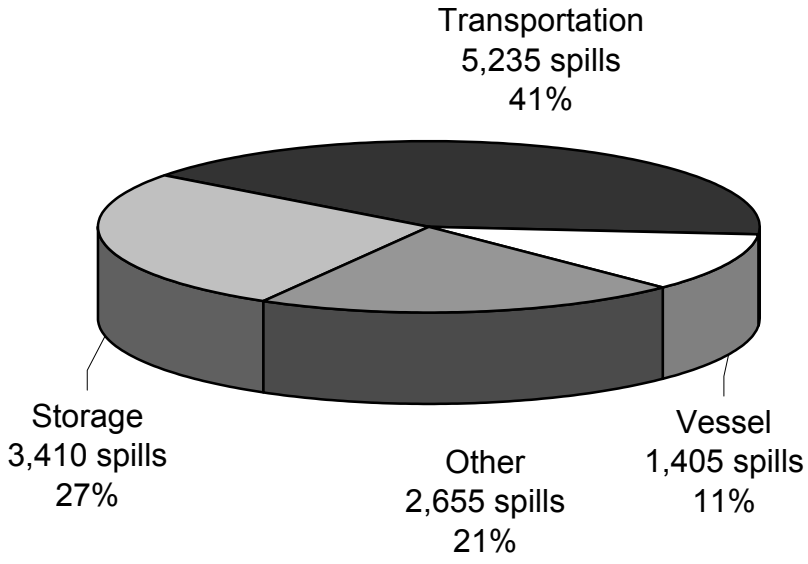
Gallons Released by Subarea



Noncrude Oil Spills by Facility Type

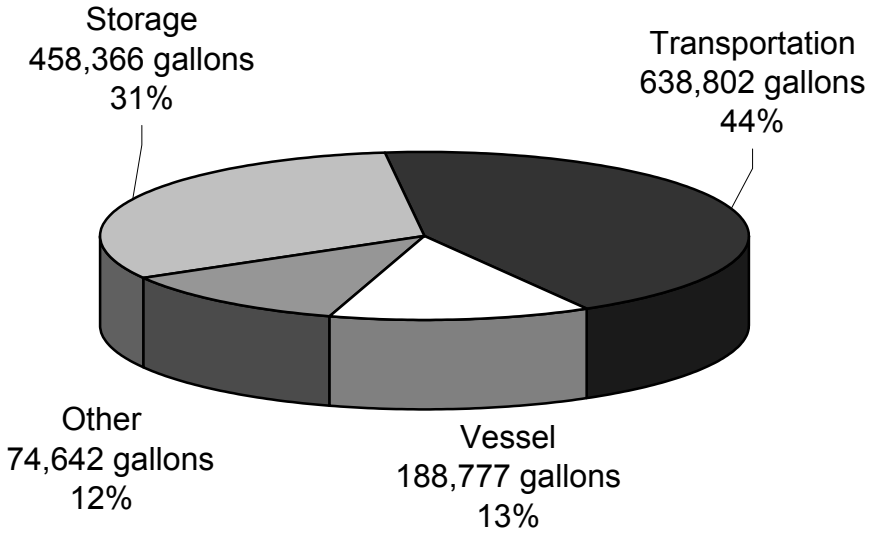
	Facility Type									
	Storage		Transportation		Vessel		Other		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	427	63,356	745	40,697	215	41,286	427	15,028	1,814	160,367
1997	415	72,862	674	47,800	233	16,871	386	23,710	1,708	161,243
1998	362	51,202	863	142,402	257	50,417	399	32,810	1,881	276,831
1999	422	43,883	817	43,893	300	15,822	422	14,711	1,961	118,309
2000	487	127,063	824	165,247	173	11,520	385	43,265	1,869	347,095
2001	660	44,103	800	46,624	129	9,648	383	23,180	1,972	123,555
2002	637	55,897	512	152,139	98	43,213	253	21,938	1,500	273,187
Total	3,410	458,366	5,235	638,802	1,405	188,777	2,655	174,642	12,705	1,460,587

Number of Spills by Facility Type



- Storage and Vessels were the facility types with the largest average volume per spill (134 gallons per spill for both).
- Transportation accounted for the most spills and the largest volume spilled amongst the four facility types.

Gallons Spilled by Facility Type

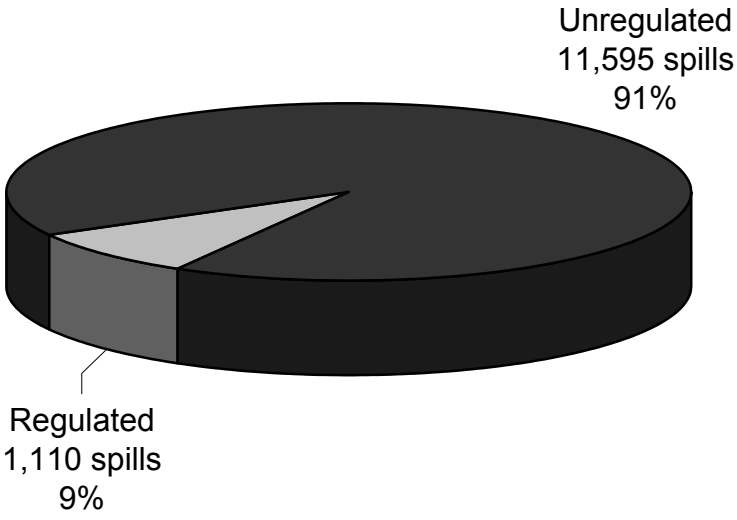


Noncrude Oil Spills at Regulated and Unregulated Facilities

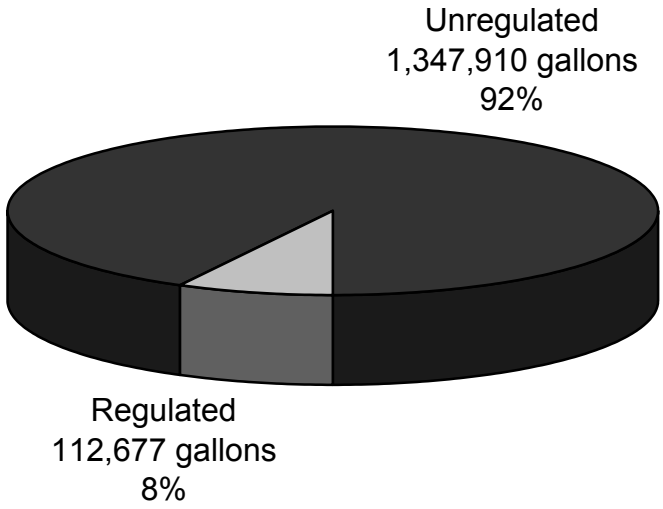
	Facility Type					
	Regulated		Unregulated		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	144	6,358	1,670	154,009	1,814	160,367
1997	158	32,978	1,550	128,265	1,708	161,243
1998	212	13,930	1,669	262,901	1,881	276,831
1999	152	18,412	1,809	99,897	1,961	118,309
2000	114	5,110	1,755	341,985	1,869	347,095
2001	121	14,464	1,851	109,091	1,972	123,555
2002	209	21,425	1,291	251,762	1,500	273,187
Total	1,110	112,677	11,595	1,347,910	12,705	1,460,587

Number of Spills at Regulated and Unregulated Facilities

- Unregulated facilities were clearly the major source of noncrude oil spills as well as the total volume released.



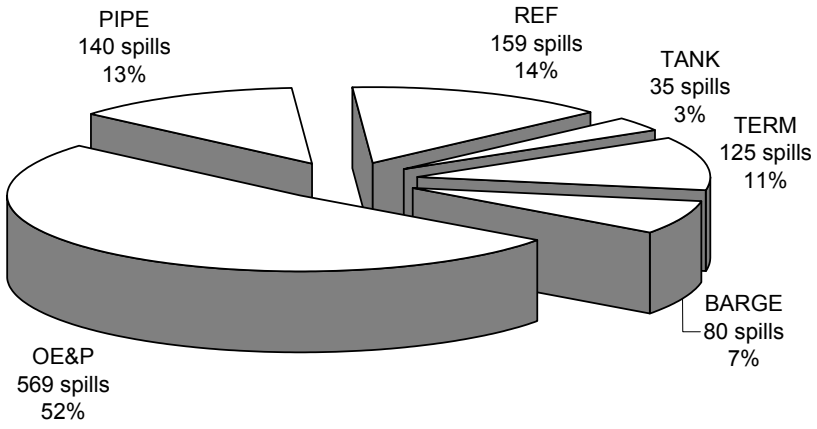
Gallons Spilled at Regulated and Unregulated Facilities



Noncrude Oil Spills at Regulated Facilities

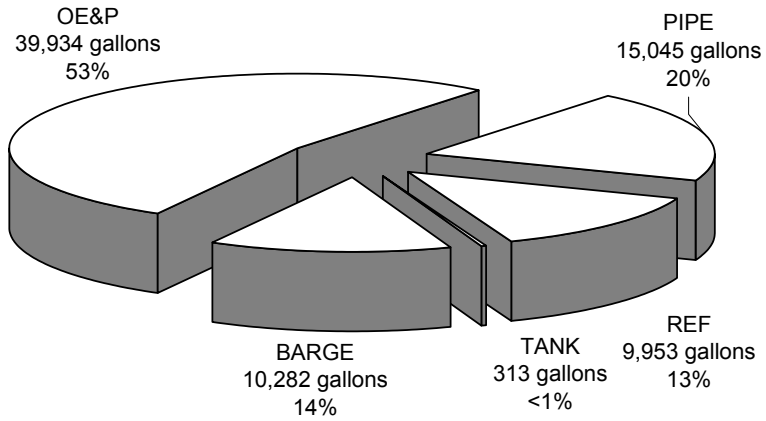
	BARGE		OE&P		PIPE		REF		TANK		TERM		TOTAL	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	12	353	56	2,534	26	621	27	1,091	8	17	14	1,732	143	6,348
1997	14	8,260	70	17,689	29	899	28	2,066	5	5	12	4,059	158	32,978
1998	17	990	87	2,178	23	7,465	52	2,514	8	36	25	747	212	13,930
1999	17	468	52	3,220	22	3,733	24	701	10	53	27	10,237	152	18,412
2000	10	142	68	1,867	11	353	7	84	2	201	15	2,462	113	5,109
2001	6	12	76	7,268	19	1,222	8	1,283			12	4,679	121	14,464
2002	4	57	160	5,178	10	752	13	2,214	2	1	20	13,223	209	21,425
Total	80	10,282	569	39,934	140	15,045	159	9,953	35	313	125	37,139	1,108	112,666

Number of Spills by Facility Type



- Although only 9% of the noncrude spills occurred at regulated facilities, oil exploration and production facilities account for over half (52%) of the noncrude oil spills and volume (53%) released.

Gallons Released by Facility Type



Noncrude Oil Spills from Unregulated Facilities

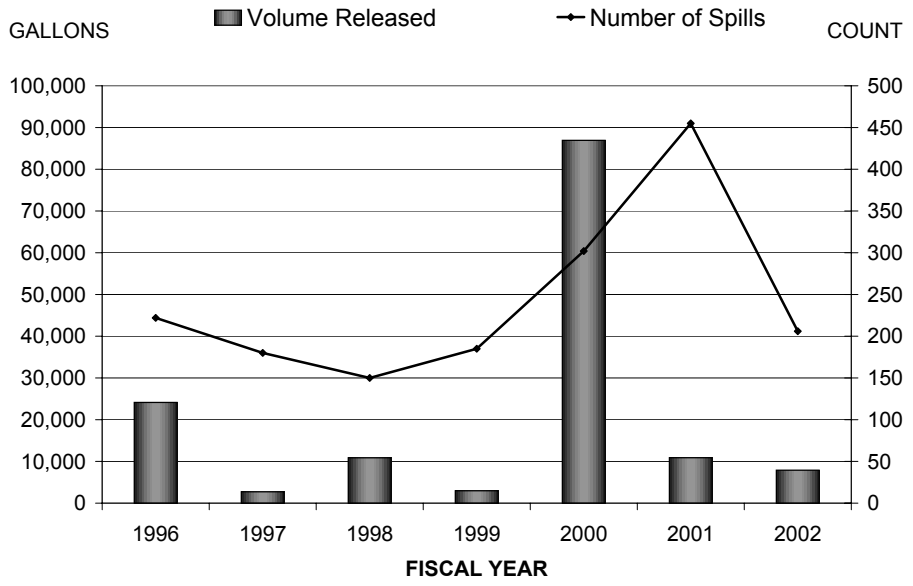
	1996		1997		1998		1999		2000		2001		2002		Cumulative Total	
FacilityType	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
Air Transportation	166	7,024	142	13,958	184	3,626	155	5,469	132	4,266	97	15,587	107	117,772	983	167,702
Cannery	18	12,031	13	1,220	14	3,718	15	1,539	7	941	3	33	6	1,666	76	21,148
Drug Lab	1	1			2	6									3	7
Gas Station	200	4,222	149	2,587	81	3,756	139	2,918	257	2,660	446	11,628	203	1,293	1,475	29,064
Harbor/Port	2	31	1	20	1	15	5	29	1	10	2	35	17	88	29	228
Landfill/Dump													7	268	7	268
Laundry Service	3	550			1	1,500	3	445	3	1,164			1	30	11	3,689
Log Processing	8	864	30	3,632	2	20	5	104	1	20	4	33	18	84	68	4,757
Logging Operation	2	35	2	80			1	5	1	5	7	368	41	215	54	708
Maintenance Yard/Shop	3	185	1	20	6	106	5	442	3	59	1	25	16	3,194	35	4,031
Mining Operation	14	883	28	1,391	35	833	24	1,022	18	514	16	263	165	4,335	300	9,241
Oil Terminal Facility	45	24,072	55	43,284	60	27,793	47	9,906	47	94,226	42	9,303	26	7,184	322	215,768
Other	237	12,131	228	20,704	245	29,840	253	10,263	215	39,906	248	15,487	178	20,806	1,604	149,137
Power Generation	17	7,244	24	5,267	24	3,459	25	3,763	29	12,642	5	774	22	6,838	146	39,987
Railroad Operation	12	221	11	1,156	20	343	25	1,359	13	135,292	5	715	16	2,058	102	141,144
Refinery Operation	6	901	6	35	7	263	3	204					3	396	25	1,799
Residence	68	9,223	73	8,877	55	6,231	103	11,786	98	11,902	117	13,866	85	8,372	599	70,257
Salvage/Wrecking Yard													1	1	1	1
School	2	105			2	115	1	30	4	406	1	10	16	5,855	26	6,521
Telecommunications							1	370	1	10			1	5	3	385
Transmission Pipeline	18	5,590	20	2,002	13	100,699	16	10,631	12	5,392	18	1,006	11	996	108	126,316
Unknown	176	2,760	135	2,482	134	2,917	158	2,153	156	3,069	120	7,558	63	844	942	21,783
Vehicle	476	24,810	417	12,244	548	28,108	550	21,743	595	18,323	593	20,909	194	25,314	3,373	151,451
Vessel	194	40,906	214	8,606	232	49,391	273	15,301	161	11,177	123	9,636	93	43,156	1,290	178,173
Water/Wastewater Facility	2	220	1	700	3	162	2	415	2	2	3	1,855	2	1,060	15	4,414
Total	1,670	154,009	1,550	128,265	1,669	262,901	1,809	99,897	1,756	341,986	1,851	109,091	1,292	251,827	11,597	1,347,976

C. Gasoline

Number of Gasoline Spills and Total Volume Spilled

Fiscal Year	Total Spills	Total Quantity Released (gallons)
1996	222	24,140
1997	180	2,731
1998	150	10,873
1999	185	2,962
2000	302	86,930
2001	455	10,883
2002	206	7,891
Total	1,700	146,410
Average	243	20,916

- Largest Gasoline Spill: 84,360 gallons spilled from an Oil Terminal Facility in the Northwest Arctic (March 24, 2000)
- Gasoline spills averaged approximately 86 gallons per incident and 480 spills or 28% were 1 gallon or less in size.

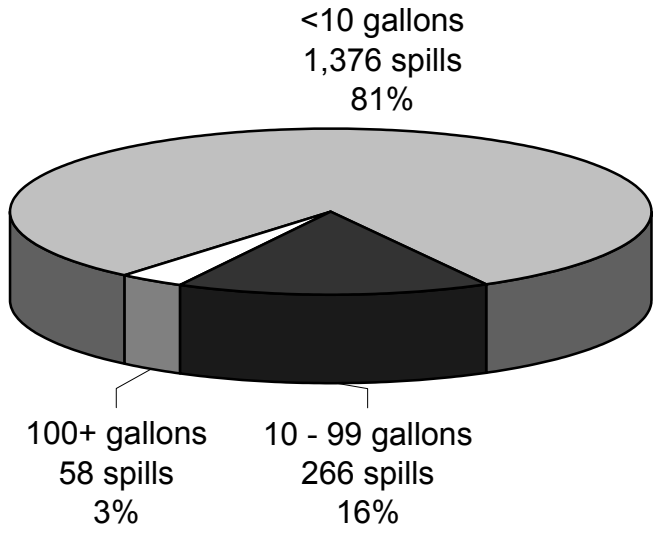


Gasoline Spills by Size Class

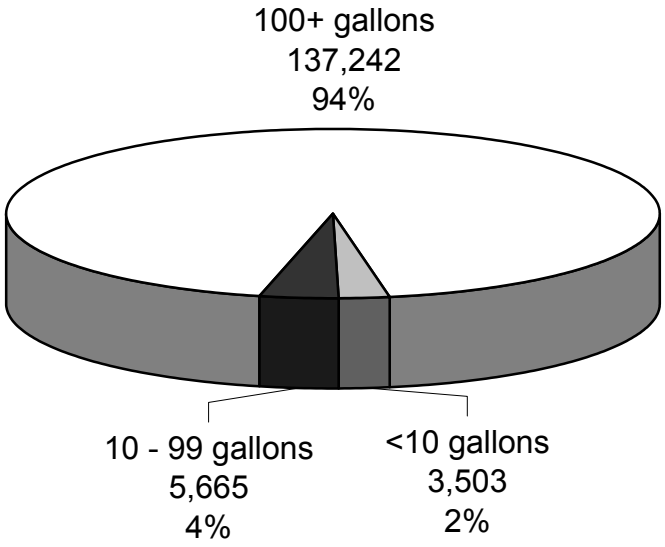
	Spill Size							
	<10 gallons		10 - 99 gallons		100+ gallons		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	170	386	37	674	15	23,080	222	24,140
1997	138	398	37	783	5	1,550	180	2,731
1998	99	285	40	923	11	9,665	150	10,873
1999	138	355	40	1,167	7	1,440	185	2,962
2000	256	657	38	853	8	85,420	302	86,930
2001	398	1,002	46	794	11	9,087	455	10,883
2002	177	420	28	471	1	7,000	206	7,891
Total	1,376	3,503	266	5,665	58	137,242	1,700	146,410

Number of Spills by Spill Size

- Spills > 100 gallons averaged 2,366 gallons per spill, and accounted for 94% of total volume spilled.



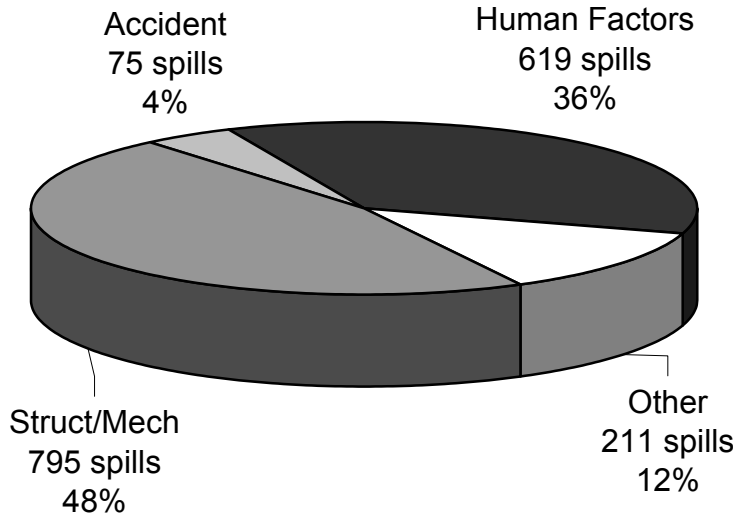
Gallons Spilled by Spill Size



Gasoline Spills by Cause

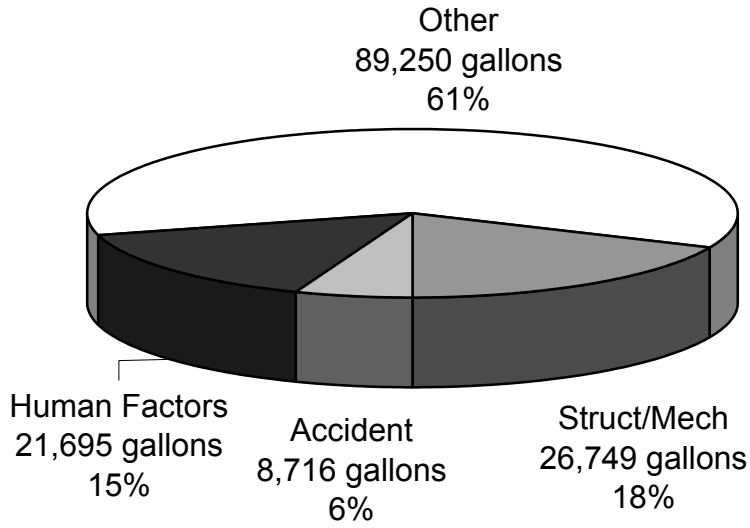
	Cause									
	Accident		Human Factors		Other		Struct/Mech		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	8	52	137	13,802	24	2,391	53	7,895	169	16,245
1997	10	129	105	1,862	23	94	42	646	138	2,085
1998	17	221	67	2,145	17	141	49	8,366	101	2,507
1999	17	594	75	908	22	216	71	1,244	114	1,718
2000	7	86	120	676	34	84,950	141	1,218	161	85,712
2001	10	586	77	2,122	61	1,331	307	6,844	148	4,039
2002	6	7,048	38	180	30	127	132	536	74	7,355
Total	75	8,716	619	21,695	211	89,250	795	26,749	905	119,661

Number of Spills by Cause



- Structural/Mechanical causes accounted for 48% of the total number of spills.
- "Other" causes accounted for the majority of the total volume spilled for gasoline.

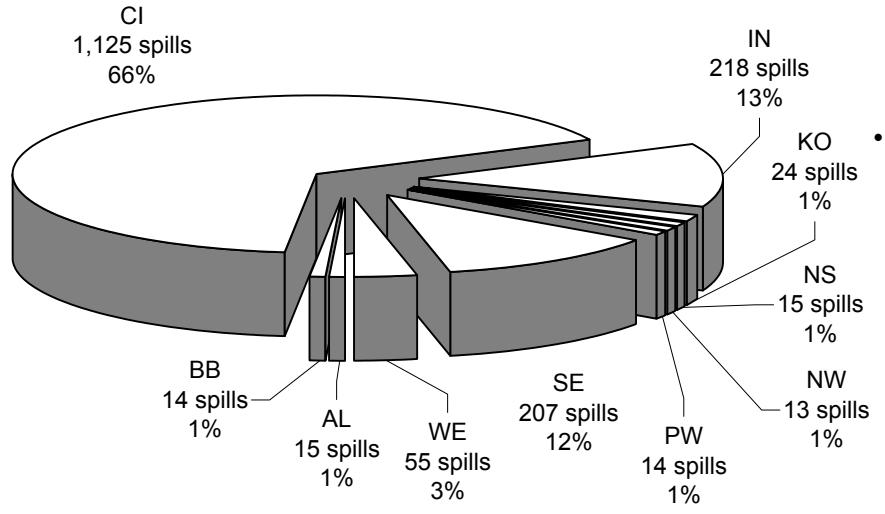
Gallons Spilled by Cause



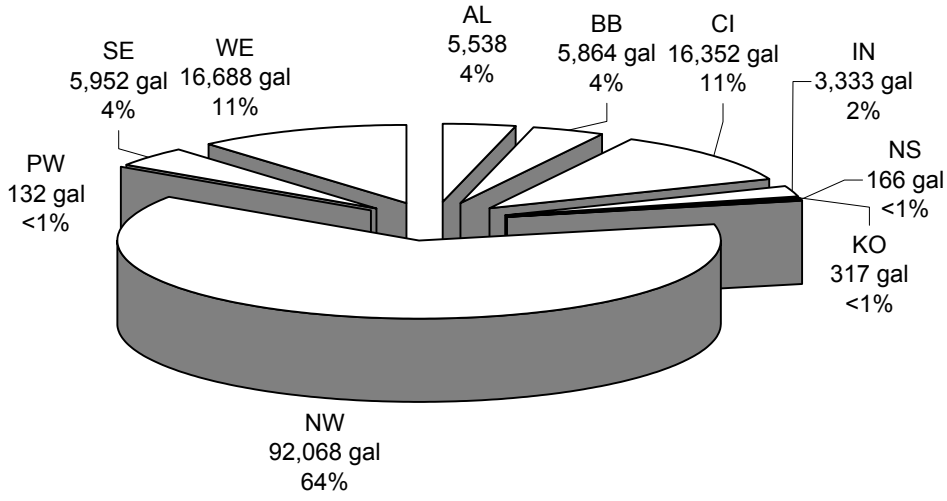
Gasoline Spills by Subarea

Subarea	Cumulative Totals, FY 96-02	
	count	*gallons*
Aleutian (AL)	15	5,538
Bristol Bay (BB)	14	5,864
Cook Inlet (CI)	1,125	16,352
Interior Alaska (IN)	218	3,333
Kodiak Island (KO)	24	317
North Slope (NS)	15	166
Northwest Arctic (NW)	13	92,068
Prince William Sound (PW)	14	132
Southeast Alaska (SE)	207	5,952
Western Alaska (WE)	55	16,688
Total	1,700	146,410

Number of Spills by Subarea



Gallons Released by Subarea

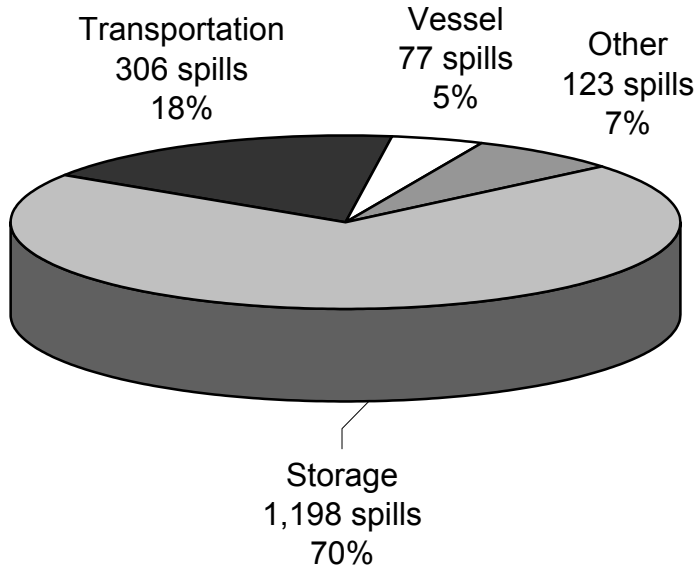


- Although the Cook Inlet subarea experienced the majority of the gasoline spills in the state, the average spill size was small (approximately 15 gallons).
- Gasoline spills in the Northwest Arctic subarea accounted for the largest percentage (64%) of gasoline released in the state. A significant amount of the total came from a single gasoline spill on March 24, 2000 when 84,360 gallons was spilled from an aviation tank farm in Unalakleet.

Gasoline Spills by Facility Type

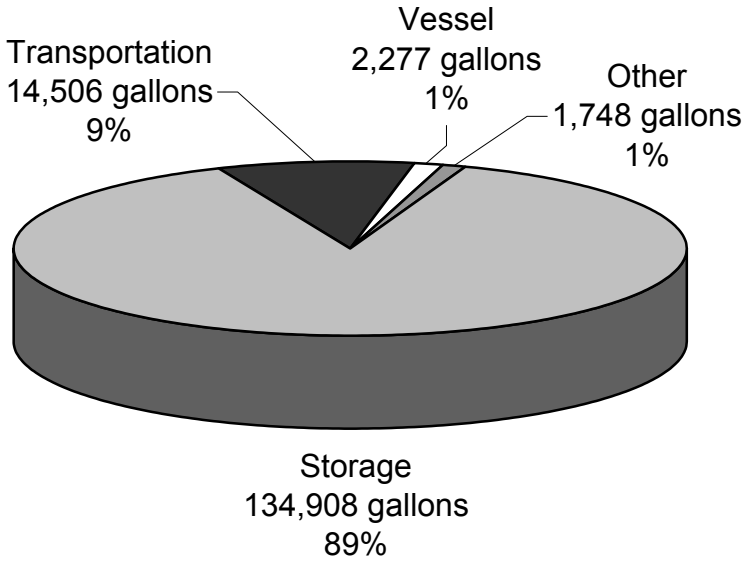
	Facility Type									
	Storage		Transportation		Vessel		Other		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	156	27,042	38	2,687	11	1,092	18	319	223	31,140
1997	107	2,081	40	428	10	55	23	167	180	2,731
1998	74	9,818	49	324	15	362	12	369	150	10,873
1999	100	1,310	42	858	19	431	24	363	185	2,962
2000	214	85,489	61	932	10	252	17	257	302	86,930
2001	390	8,568	45	2,061	3	65	17	189	455	10,883
2002	157	600	31	7,216	9	20	12	84	209	7,920
Total	1,198	134,908	306	14,506	77	2,277	123	1,748	1,704	153,439

Number of Spills by Facility Type



- Storage facilities were the major source of gasoline spills in terms of numbers of spills and total volume spilled.

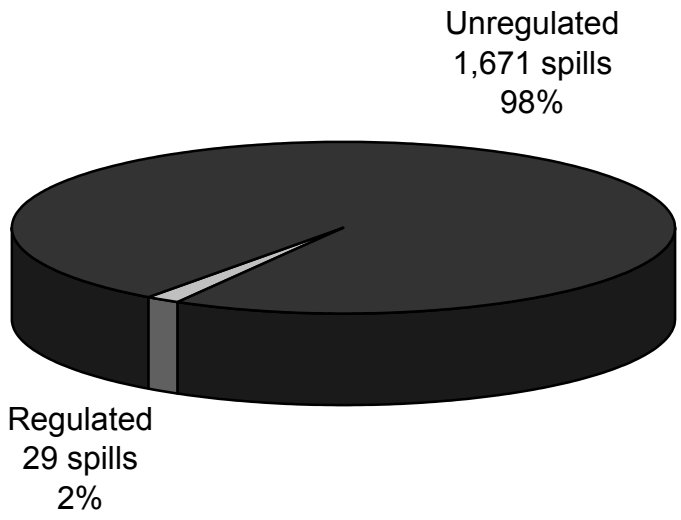
Gallons Spilled by Facility Type



Gasoline Spills at Regulated and Unregulated Facilities

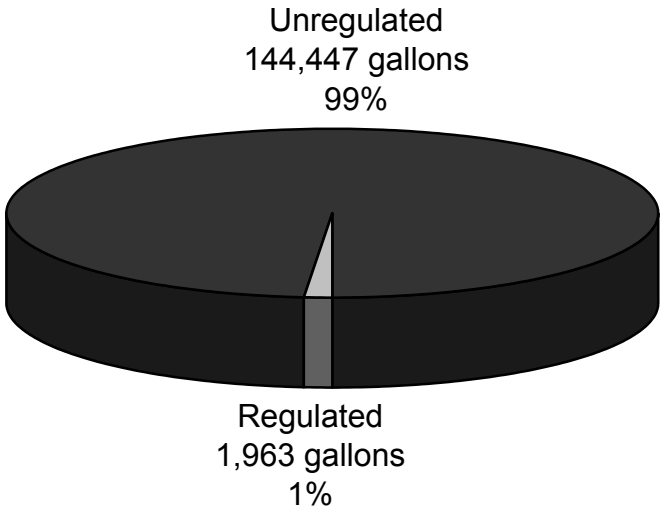
	Facility Type					
	Regulated		Unregulated		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	3	340	219	23,800	222	24,140
1997	5	774	175	1,957	180	2,731
1998	5	77	145	10,796	150	10,873
1999	8	186	177	2,776	185	2,962
2000	4	24	298	86,906	302	86,930
2001	3	561	452	10,322	455	10,883
2002	1	1	205	7,890	206	7,891
Total	29	1,963	1,671	144,447	1,700	146,410

Number of Spills at Regulated vs. Unregulated Facilities



- Unregulated facilities accounted for 98% of the gasoline spills and 99% of the volume released.
- Gasoline spills from unregulated facilities averaged 86 gallons per incident as compared to 68 gallons spilled per incident at regulated facilities.

Gallons Released at Regulated vs. Unregulated Facilities

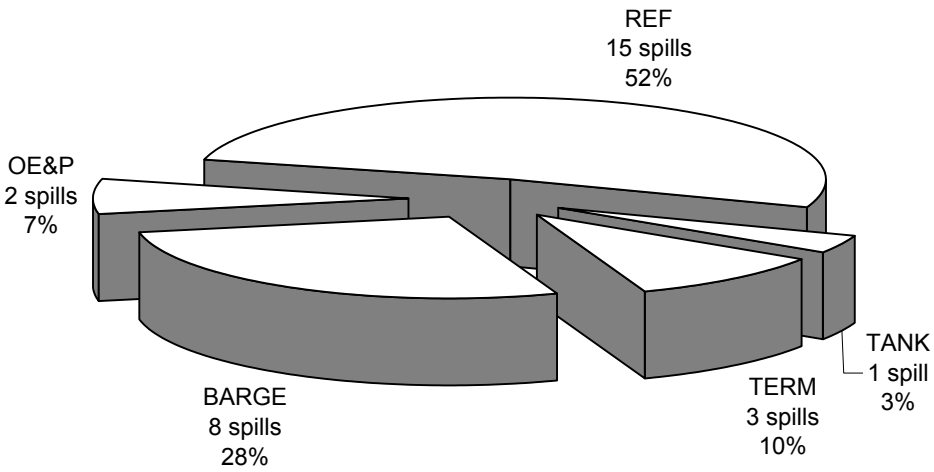


Gasoline Spills at Regulated Facilities

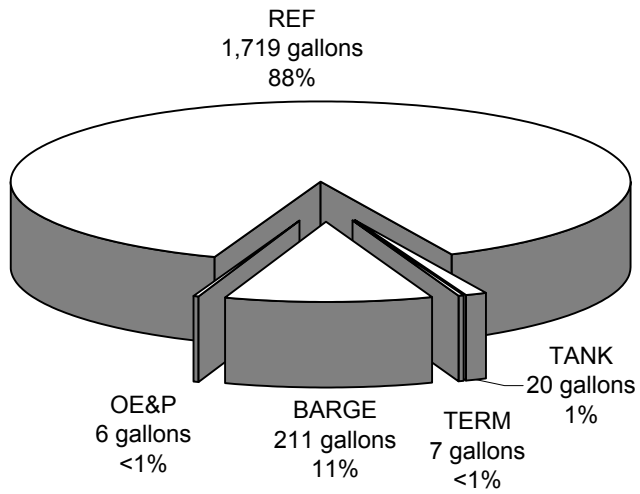
	BARGE		OE&P		REF		TANK		TERM		TOTAL	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996					3	340					3	340
1997	2	20			3	754					5	774
1998	1	30	1	1	2	43			1	3	5	77
1999	4	160			2	5	1	20	1	1	7	166
2000					3	21			1	3	4	24
2001			1	5	2	556					3	561
2002	1	1									1	1
Total	8	211	2	6	15	1,719	1	20	3	7	28	1,943

Number of Spills at Regulated Facilities

- Only 2% of the gasoline spills occurred at regulated facilities, of that, Refineries account for 52% of the spills reported and 88% of the total volume spilled.



Gallons Released at Regulated Facilities



Gasoline Spills from Unregulated Facilities

- 82% of the gasoline spills occur at gas stations or from vehicles and account for 14% of the volume loss.
- 80% of the volume loss occurs at unregulated oil terminals or tank farms and only 2% of the total spills occur at these facilities.

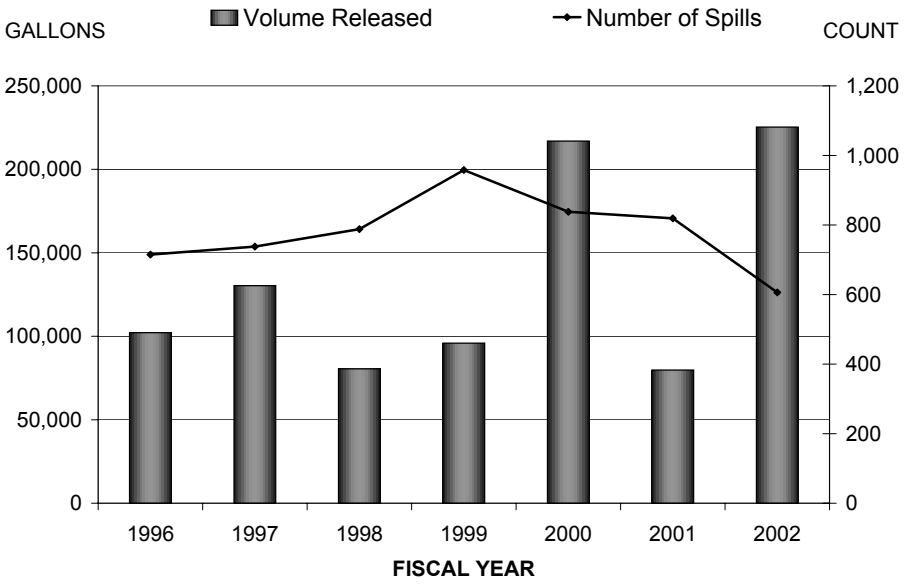
	1996		1997		1998		1999		2000		2001		2002		Cumulative Total	
FacilityType	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
Air Transportation	1	1	5	73	4	36	3	60	4	238	5	1,234	1	1	23	1,643
Cannery			1	50			2	150							3	200
Gas Station	141	665	98	1,016	59	3,483	90	488	205	713	384	2,606	152	509	1,129	9,480
Harbor/Port					1	15					1	10			2	25
Log Processing			1	1											1	1
Maintenance Yard/Shop							1	40							1	40
Mining Operation	1	15			1	3									2	18
Oil Terminal Facility	8	18,621	4	260	9	6,276	5	627	5	84,655	4	5,406	4	81	39	115,926
Other	12	110	17	140	7	291	12	293	8	219	13	158	7	64	76	1,275
Railroad Operation			1	20	1	10	2	6			1	404			5	440
Refinery Operation	1	1			1	5									2	6
Residence	1	400			1	5			1	100					3	505
Transmission Pipeline	1	2,000	1	20	1	5							1	20	4	2,045
Unknown	6	209	6	27	5	78	11	69	8	35	4	31	4	5	44	454
Vehicle	36	686	33	315	41	257	37	792	57	694	37	408	28	7,191	269	10,343
Vessel	11	1,092	8	35	14	332	14	251	10	252	3	65	8	19	68	2,046
Total	219	23,800	175	1,957	145	10,796	177	2,776	298	86,906	452	10,322	205	7,890	1,671	144,447

D. Diesel

Number of Diesel Spills and Total Volume Spilled

Fiscal Year	Total Spills	Total Quantity Released (gallons)
1996	715	102,182
1997	738	130,360
1998	788	80,498
1999	958	95,897
2000	838	216,951
2001	819	79,782
2002	606	225,330
Total	5,462	931,000
Average	780	133,000

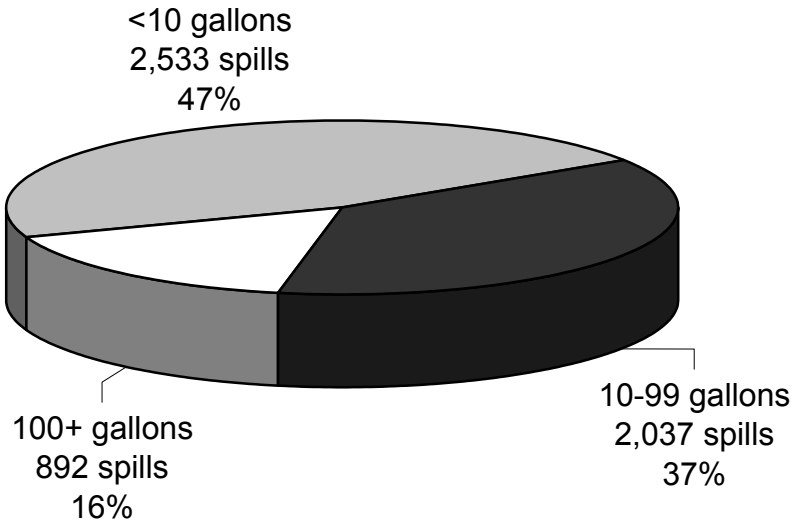
- The largest diesel spill on record occurred on December 22, 1999 when a train derailment resulted in 120,516 gallons of JP8 spilled at Gold Creek.
- The number of diesel spills appears to be on a decline since 1999.



Diesel Spills by Size Class

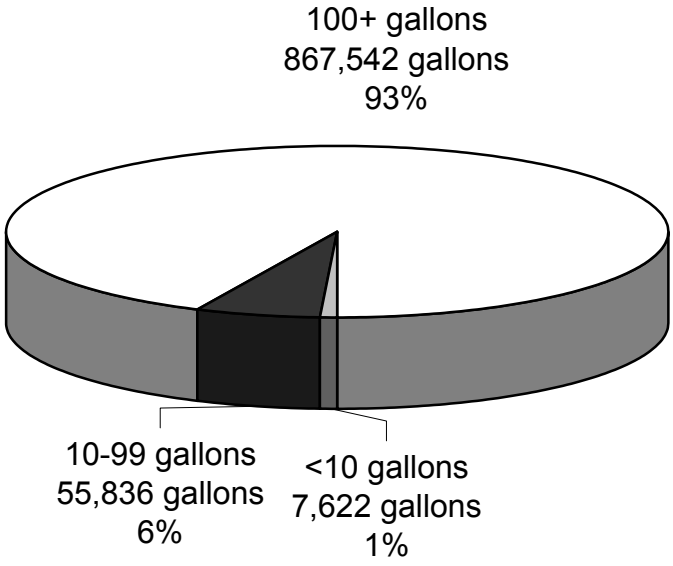
	Size Class							
	<10 gallons		10-99 gallons		100+ gallons		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	347	1,026	253	7,238	115	93,918	715	102,182
1997	327	1,010	276	7,536	135	121,814	738	130,360
1998	358	1,045	321	8,686	109	70,767	788	80,498
1999	471	1,404	343	9,102	144	85,391	958	95,897
2000	391	1,175	308	8,702	139	207,074	838	216,951
2001	370	1,175	319	8,919	130	69,688	819	79,782
2002	269	787	217	5,653	120	218,890	606	225,330
Total	2,533	7,622	2,037	55,836	892	867,542	5,462	931,000

Number of Spills by Spill Size



- Diesel spills greater than 100 gallons in size accounted for only 16% of the total number of diesel spills during this reporting period; however, the total volume spilled amounted to 93% of the entire volume of diesel spilled.

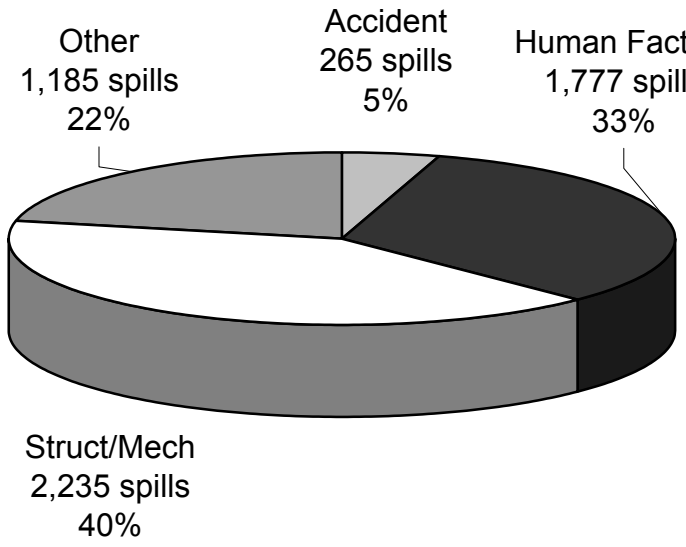
Gallons Spilled by Spill Size



Diesel Spills by Cause

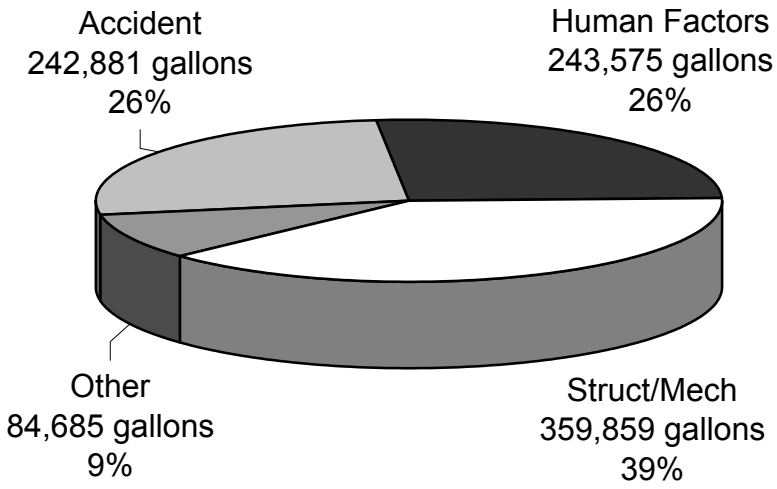
	Cause									
	Accident		Human Factors		Struct/Mech		Other		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	49	30,822	255	30,721	271	36,306	140	4,333	575	97,849
1997	26	4,971	271	41,512	292	52,411	149	31,466	589	98,894
1998	41	22,058	286	28,700	335	27,052	126	2,688	662	77,810
1999	34	18,545	311	27,610	378	40,089	235	9,653	723	86,244
2000	44	138,710	244	27,228	346	41,707	204	9,306	634	207,645
2001	45	10,824	229	15,360	325	33,079	220	20,519	599	59,263
2002	26	16,951	181	72,444	288	129,215	111	6,720	495	218,610
Total	265	242,881	1,777	243,575	2,235	359,859	1,185	84,685	4,277	846,315

Number of Spills by Cause



- Structural/Mechanical causes and Human Factors accounted for the vast majority of diesel spills in Alaska.

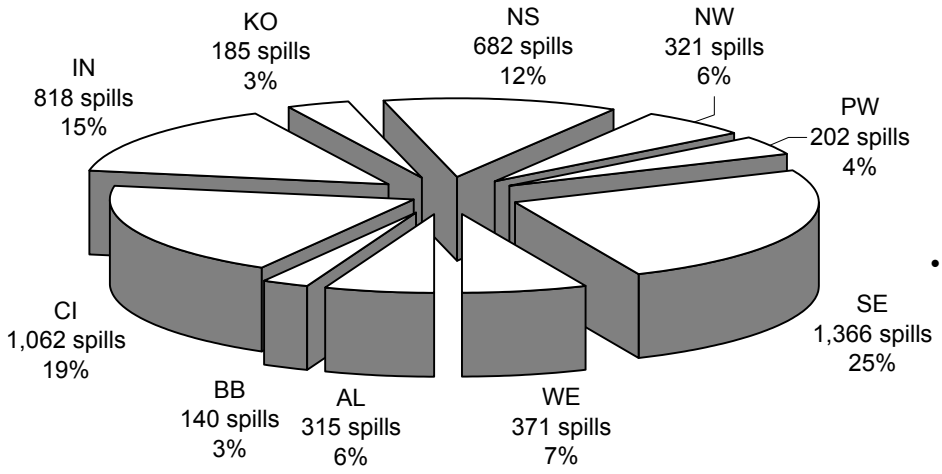
Gallons Spilled by Cause



Diesel Spills by Subarea

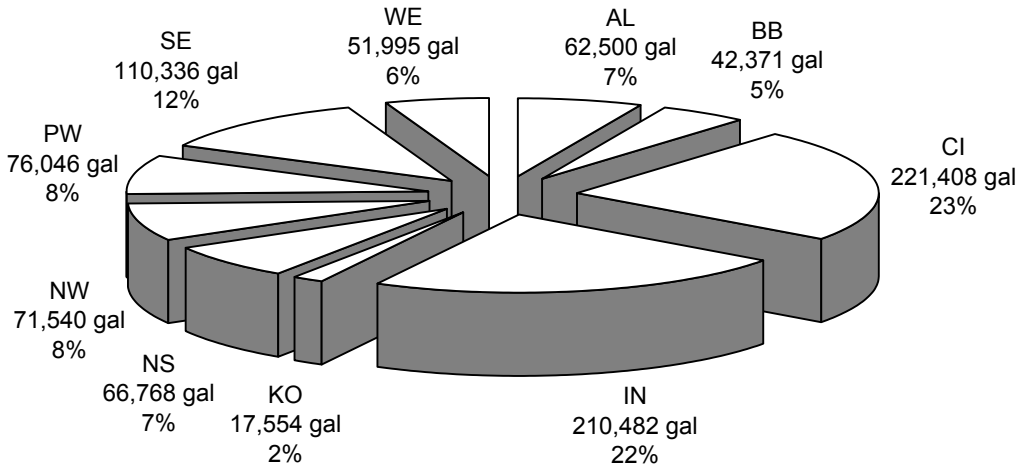
Subarea	Cumulative Totals, FY 96-02	
	count	*gallons*
Aleutian (AL)	315	62,500
Bristol Bay (BB)	140	42,371
Cook Inlet (CI)	1,062	221,408
Interior Alaska (IN)	818	210,482
Kodiak Island (KO)	185	17,554
North Slope (NS)	682	66,768
Northwest Arctic (NW)	321	71,540
Prince William Sound (PW)	202	76,046
Southeast Alaska (SE)	1,366	110,336
Western Alaska (WE)	371	51,995
Total	5,462	931,000

Number of Spills by Subarea



- The number of diesel spills was fairly well distributed throughout the ten subareas, with Southeast Alaska (25%), Cook Inlet (19%) , Interior Alaska (15%) and the North Slope (12%) at the higher end of the spectrum.
- In terms of total volume of diesel spilled by subarea, the Cook Inlet (23%) and Interior Alaska (22%) subareas accounted for 45% of the total volume spilled.

Gallons Released by Subarea

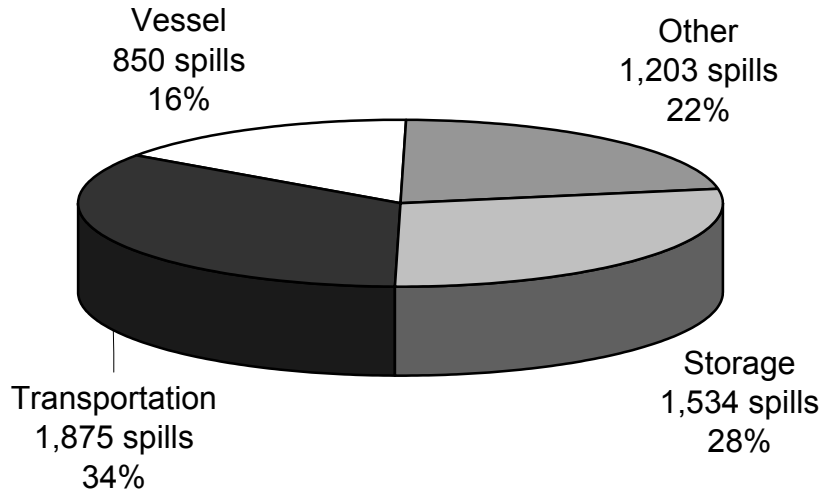


Diesel Spills by Facility Type

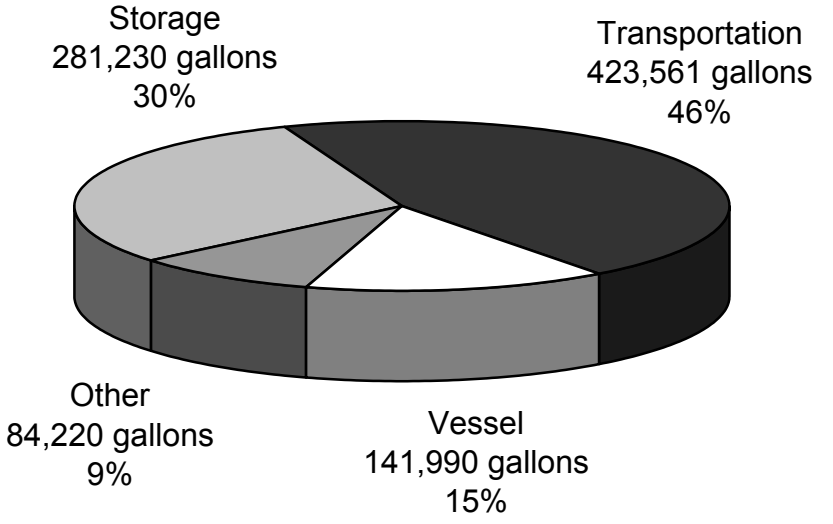
	Facility Type									
	Storage		Transportation		Vessel		Other		Total	
FY	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
1996	198	35,885	231	18,445	131	39,330	155	8,522	715	102,182
1997	219	66,184	200	29,257	142	16,240	177	18,679	738	130,360
1998	193	33,826	269	26,593	159	9,437	167	10,642	788	80,498
1999	243	38,127	332	32,564	174	14,108	209	11,098	958	95,897
2000	231	38,802	328	156,901	88	10,696	191	10,552	838	216,951
2001	231	34,585	307	22,487	96	9,271	185	13,439	819	79,782
2002	219	33,821	208	137,314	60	42,908	119	11,288	606	225,330
Total	1,534	281,230	1,875	423,561	850	141,990	1,203	84,220	5,462	931,000

Number of Spills by Facility Type

- Transportation facilities accounted for nearly half of the total volume spilled from diesel spills.



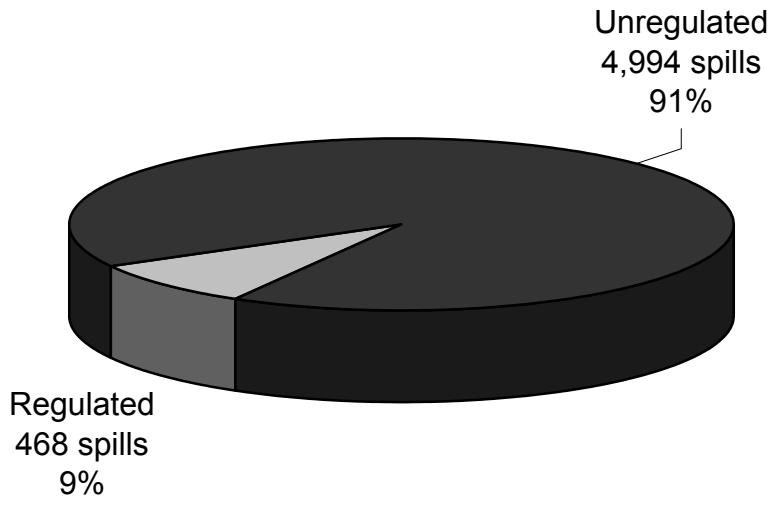
Gallons Spilled by Facility Type



Diesel Spills at Regulated and Unregulated Facilities

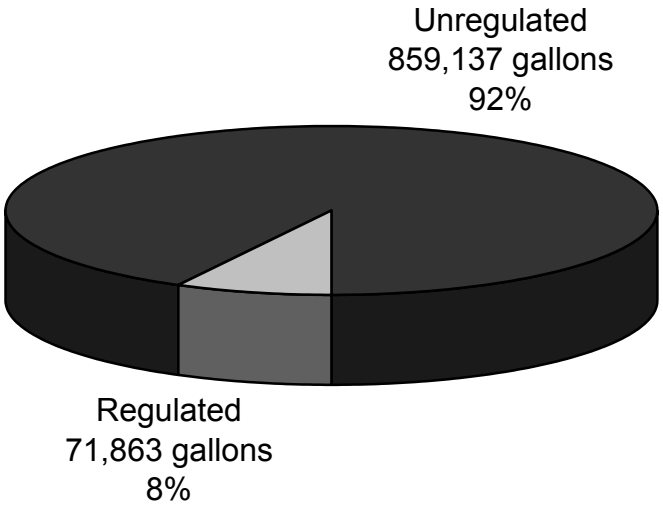
	Facility Type					
	Regulated		Unregulated		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	56	4,226	659	97,956	715	102,182
1997	63	28,141	675	102,219	738	130,360
1998	87	3,426	701	77,072	788	80,498
1999	67	15,282	891	80,615	958	95,897
2000	47	3,255	791	213,696	838	216,951
2001	64	11,222	755	68,560	819	79,782
2002	84	6,311	522	219,019	606	225,330
Total	468	71,863	4,994	859,137	5,462	931,000

Number of Spills at Regulated vs. Unregulated Facilities



- Similar to gasoline spills, the number of diesel spills from unregulated facilities occurred approximately ten times as much as from regulated facilities.
- The amount of diesel released per incident from unregulated facilities was 172 gallons as compared to 154 gallons of diesel per incident for regulated facilities.

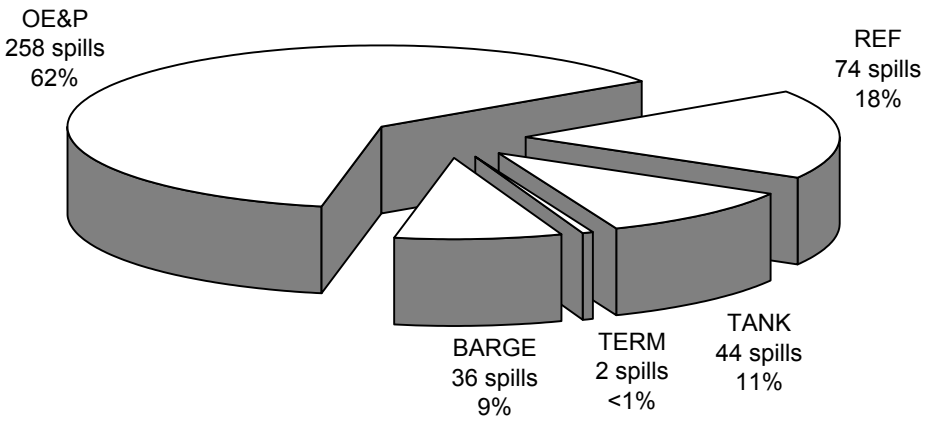
Gallons Released at Regulated vs. Unregulated Facilities



Diesel Spills at Regulated Facilities

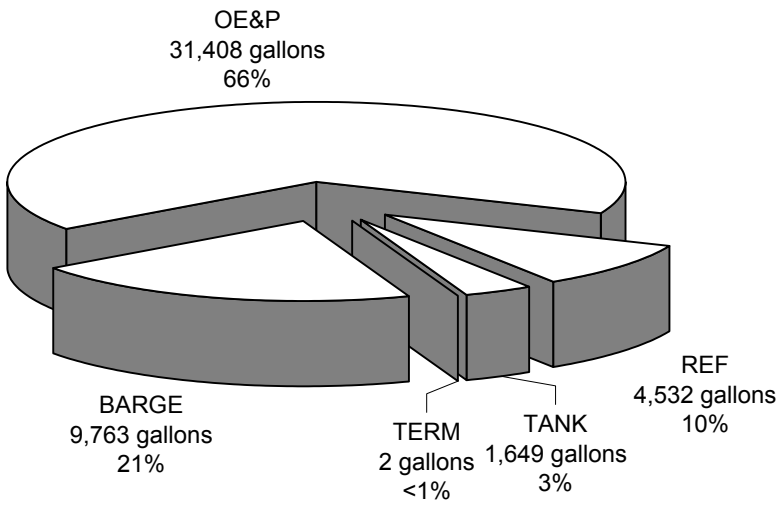
	BARGE		OE&P		REF		TANK		TERM		TOTAL	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	3	261	24	2,082	13	91	9	172			7	1,620
1997	4	8,172	29	16,728	17	717	9	447	2	2	2	2,075
1998	10	902	43	718	9	861	9	295			16	650
1999	9	260	25	2,798	15	2,152	10	78			8	9,994
2000	5	134	25	399	9	347	1	40			7	2,335
2001	3	8	43	5,837	9	314	4	572			5	4,491
2002	2	26	69	2,846	2	50	2	45			9	3,344
Total	36	9,763	258	31,408	74	4,532	44	1,649	2	2	370	45,705

Number of Spills at Regulated Facilities



- Only 9% of the total diesel spills occurred at regulated facilities and oil exploration and production facilities were the source of the majority of these diesel spills in terms of the number of spills (62%) and total volume released (66%).

Gallons Released at Regulated Facilities



Diesel Spills from Unregulated Facilities

- The transportation node comprised of vehicles (22%), vessels (16%), air transportation (6%) and rail (<1%) account for 44% of the diesel spills at unregulated facilities and 58% of the volume loss. Although rail transportation incidents occur <1% they contribute 16% of the total volume loss of diesel.

	1996		1997		1998		1999		2000		2001		2002		Cumulative Total	
FacilityType	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
Air Transportation	7	669	10	5,031	18	396	81	3,332	97	3,793	65	4,244	56	115,815	334	133,280
Cannery	9	10,661	7	764	8	3,678	9	997	4	670	1	25	4	1,645	42	18,440
Drug Lab					1	5									1	5
Gas Station	49	1,523	43	1,521	19	157	45	2,232	45	1,447	56	8,986	39	742	296	16,608
Harbor/Port	2	31	1	20			3	13	1	10	1	25	8	34	16	133
Laundry Service	1	500			1	1,500	3	445	3	1,164			1	30	9	3,639
Log Processing	5	821	8	3,030			4	14			1	2	1	2	19	3,869
Logging Operation	2	35	2	80					1	5	3	317	4	33	12	470
Maintenance Yard/Shop	2	85	1	20	5	96	2	97	2	29	1	25	5	1,558	18	1,910
Mining Operation	10	846	13	1,182	19	695	12	93	12	403	8	193	29	931	103	4,343
Oil Terminal Facility	28	3,539	48	42,592	46	17,311	36	9,159	39	9,348	35	3,884	19	6,900	251	92,733
Other	87	7,226	98	16,910	89	9,993	106	7,027	102	8,721	112	8,170	86	10,924	680	68,971
Power Generation	5	6,935	11	4,891	10	2,889	11	3,052	17	11,196	2	700	12	4,541	68	34,204
Railroad Operation	4	95	4	395	7	172	7	1,173	8	135,145	2	260	8	593	40	137,833
Refinery Operation			2	7	2	55									4	62
Residence	67	8,823	73	8,877	54	6,226	101	11,581	95	11,749	113	13,826	80	8,365	583	69,447
School	2	105			2	115			4	406	1	10	14	5,685	23	6,321
Telecommunications							1	370	1	10					2	380
Transmission Pipeline	6	618	12	1,667	7	140	9	10,252	10	5,390	15	870	7	935	66	19,872
Unknown	65	1,282	68	1,634	67	617	96	1,783	86	1,811	66	5,247	31	347	479	12,721
Vehicle	178	14,873	137	4,832	194	24,330	199	15,132	181	11,837	178	10,958	60	17,058	1,127	99,020
Vessel	128	39,069	136	8,066	149	8,535	165	13,848	83	10,562	93	9,263	58	42,882	812	132,225
Water/Wastewater Facility	2	220	1	700	3	162	1	15			2	1,555			9	2,652
Total	659	97,956	675	102,219	701	77,072	891	80,615	791	213,696	755	68,560	522	219,019	4,994	859,137

E. Hazardous Substances

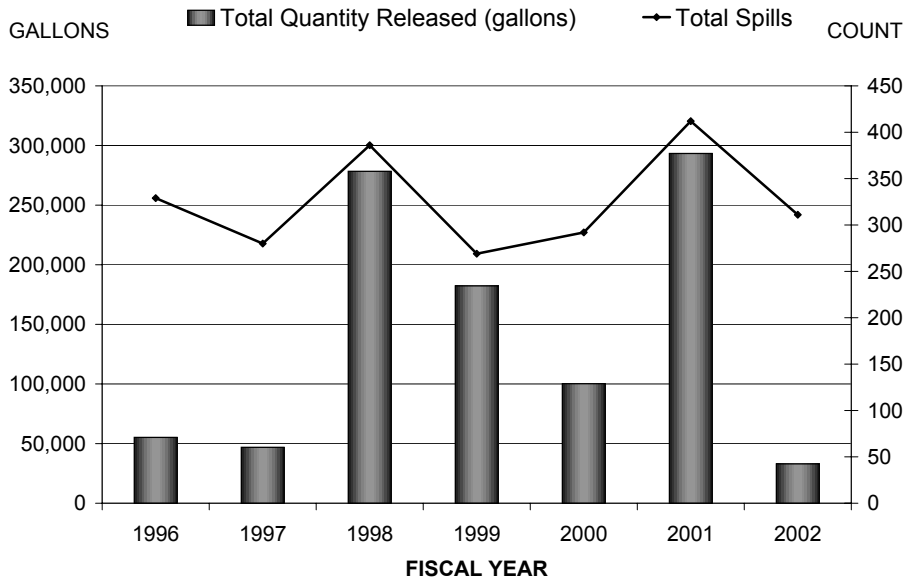
There were no significant trends associated with chemical releases over this seven-year reporting period.

As mentioned previously in this report, the following is the definition of Hazardous Substances. Also, see Appendix A for a list of hazardous substances commonly reported in the state.

> **Hazardous Substance:** means (A) an element or compound that, when it enters into or on the surface or subsurface land or water of the state, presents an imminent and substantial danger to the public health or welfare, or to fish, animals, vegetation, or any part of the natural habitat in which fish, animals, or wildlife may be found; or (B) a substance defined as a hazardous substance under 42 U.S.C. 9601-9657 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980); "hazardous substance" does not include uncontaminated crude oil or uncontaminated refined oil in an amount of 10 gallons or less.

Number of Hazardous Substance Spills and Total Volume Spilled

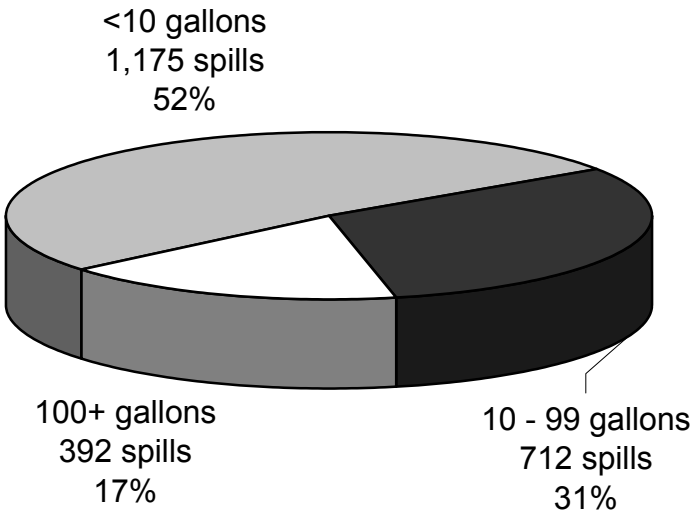
Fiscal Year	Total Spills	Total Quantity Released (gallons)
1996	329	55,216
1997	280	46,875
1998	386	278,364
1999	269	182,283
2000	292	100,229
2001	412	293,317
2002	311	32,975
Total	2,279	989,259
Average	326	141,323



Hazardous Substance Spills by Size Class

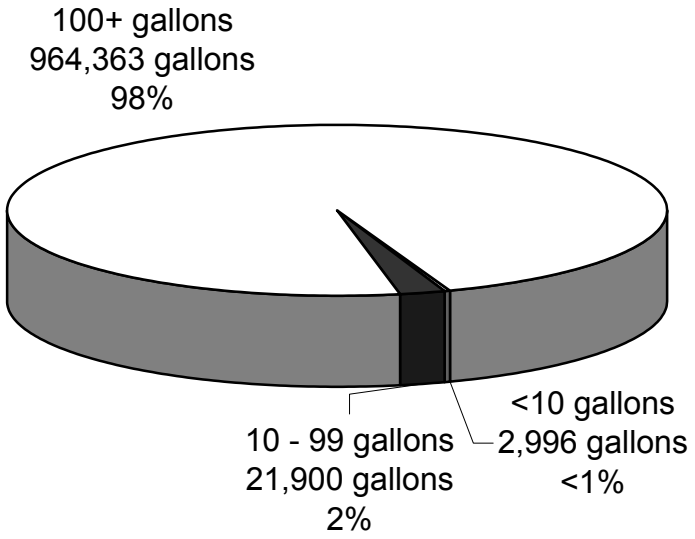
	Spill Size							
	<10 gallons		10 - 99 gallons		100+ gallons		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	170	408	104	3373	55	51435	329	55216
1997	145	369	83	2477	52	44029	280	46875
1998	201	502	125	3900	60	273962	386	278364
1999	128	365	86	2495	55	179423	269	182283
2000	139	355	92	2931	61	96943	292	100229
2001	234	669	123	3883	55	288765	412	293317
2002	158	328	99	2841	54	29806	311	32975
Total	1,175	2,996	712	21,900	392	964,363	2,279	989,259

Number of Spills by Spill Size



- Most chemical spills were small in terms of quantity released. Spills under 100 gallons in size made up 83% of the total number of releases.
- While only 17% of the total number of spills were greater than 100 gallons in size, the volume released was 98% of the total volume of hazardous substance spills.

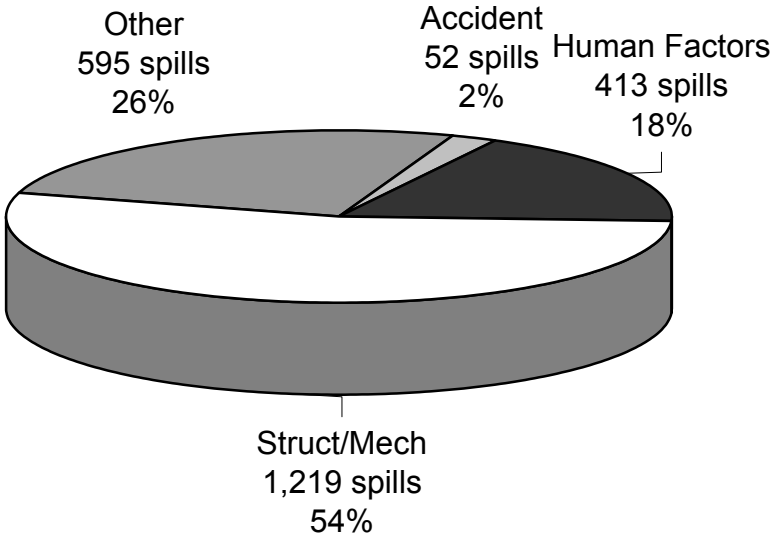
Gallons Spilled by Spill Size



Hazardous Substance Spills by Cause

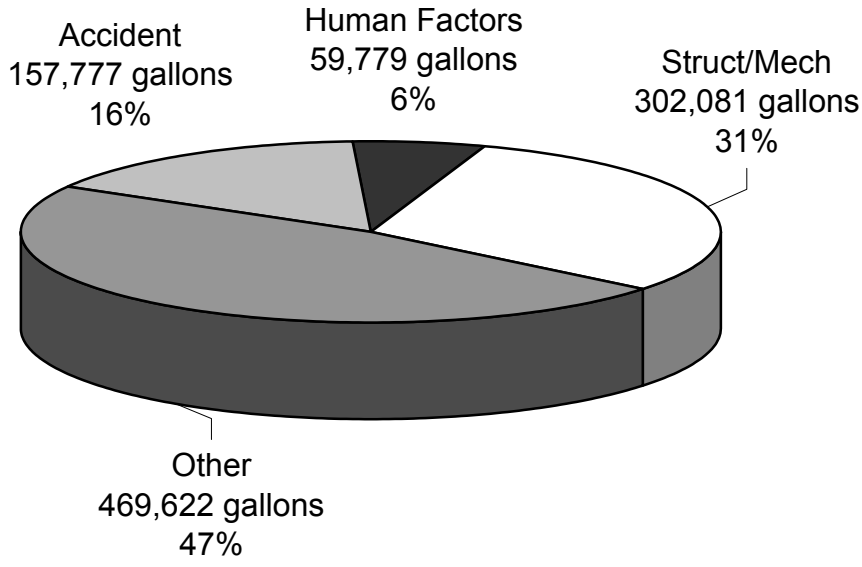
	Cause									
	Accident		Human Factors		Struct/Mech		Other		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	4	11	68	14,450	176	35,137	81	5,618	329	55,216
1997	2	46	50	8,063	164	30,780	64	7,986	280	46,875
1998	11	362	73	4,955	240	61,634	62	211,413	386	278,364
1999	6	4,294	44	2,218	141	29,857	78	145,914	269	182,283
2000	8	584	58	4,485	146	27,490	80	67,670	292	100,229
2001	11	152,078	60	12,976	176	99,309	165	28,954	412	293,317
2002	10	402	60	12,632	176	17,874	65	2,067	311	32,975
Total	52	157,777	413	59,779	1,219	302,081	595	469,622	2,279	989,259

Number of Spills by Cause



- Approximately 70% of spills due to Structural/Mechanical causes can be attributed to leaks, line and valve failures.
- Approximately 58% of spills due to Human Factor causes can be attributed to overfills and human error.

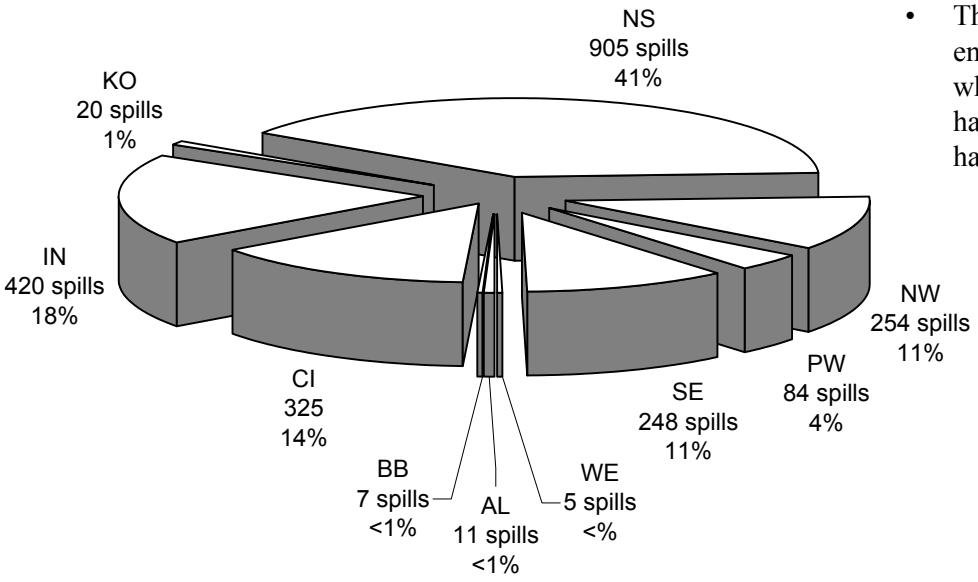
Gallons Spilled by Cause



Hazardous Substance Spills by Subarea

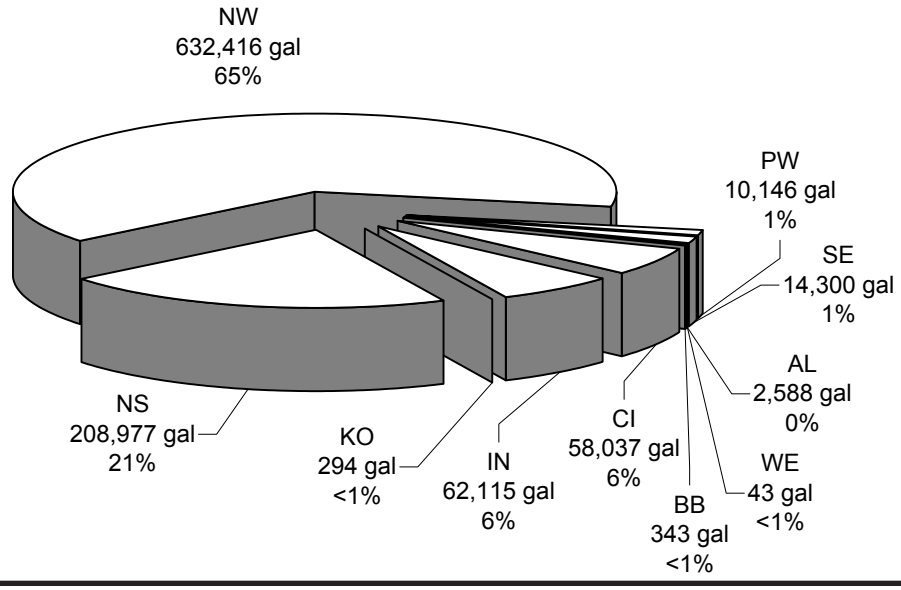
Subarea	Cumulative Totals, FY 96-02	
	count	*gallons*
Aleutian (AL)	11	2,588
Bristol Bay (BB)	7	343
Cook Inlet (CI)	325	58,037
Interior Alaska (IN)	420	62,115
Kodiak Island (KO)	20	294
North Slope (NS)	905	208,977
Northwest Arctic (NW)	254	632,416
Prince William Sound (PW)	84	10,146
Southeast Alaska (SE)	248	14,300
Western Alaska (WE)	5	43
Total	2,279	989,259

Number of Spills by Subarea



- The North Slope subarea experienced the greatest number of spills, while the Northwest Arctic subarea had the greatest total volume of hazardous substances released.

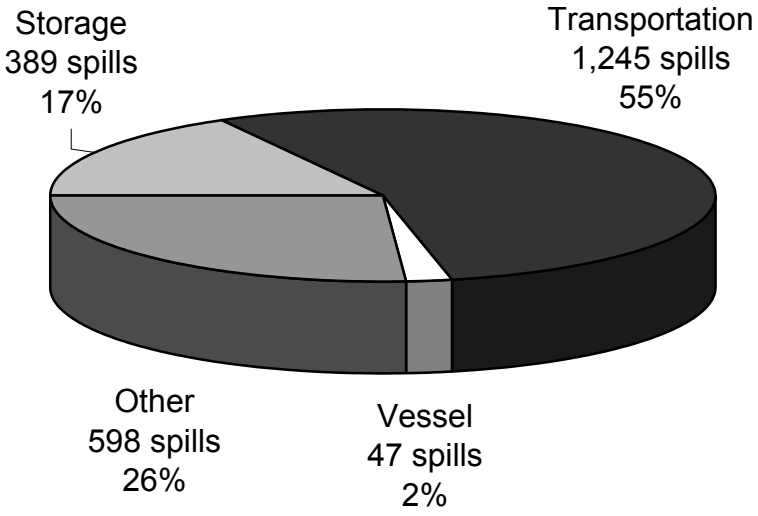
Gallons Spilled by Subarea



Hazardous Substance Spills by Facility Type

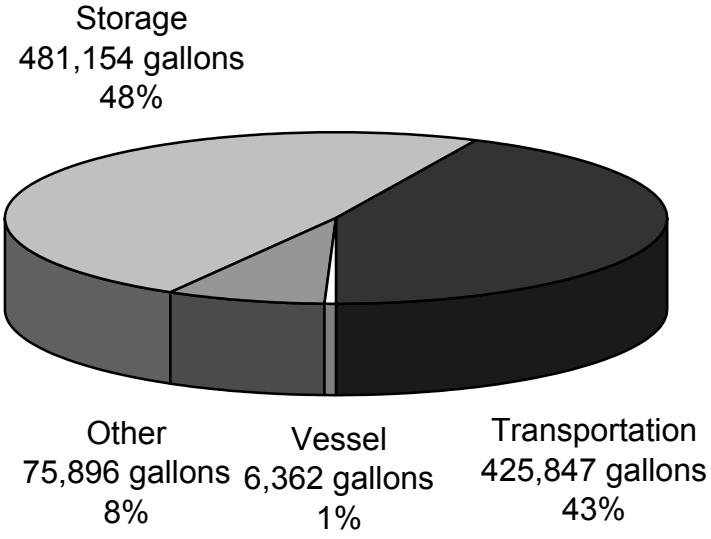
	Facility Type									
	Storage		Transportation		Vessel		Other		Total	
FY	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
1996	36	4,047	176	25,414	6	11	111	25,744	329	55,216
1997	40	15,557	164	22,870	6	1,153	70	7,295	280	46,875
1998	76	246,884	234	17,600	5	218	71	13,662	386	278,364
1999	63	158,171	140	17,323	4	14	62	6,775	269	182,283
2000	49	16,724	157	71,702	9	226	77	11,577	292	100,229
2001	49	30,806	201	251,350	13	4,727	149	6,434	412	293,317
2002	76	8,965	173	19,588	4	13	58	4,409	311	32,975
Total	389	481,154	1,245	425,847	47	6,362	598	75,896	2,279	989,259

Number of Spills by Facility Type



- Transportation facilities accounted for over half the releases.
- Storage facilities account for 17% of the releases and nearly half the total volume (an average of 1,237 gallons per release).

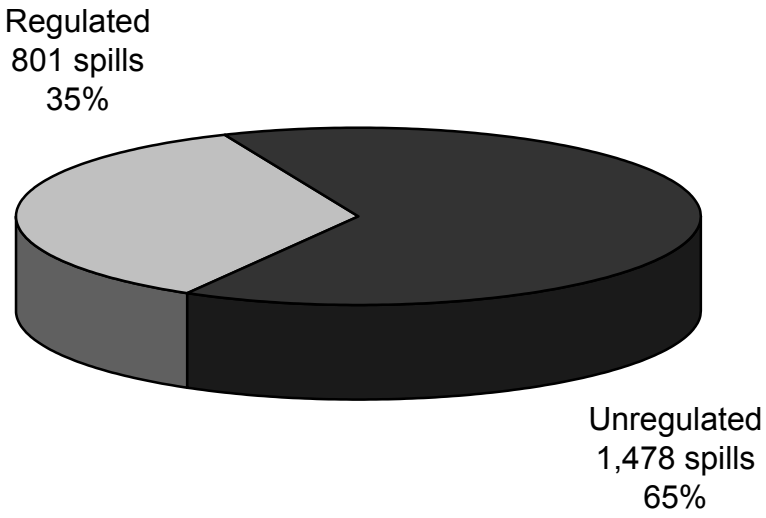
Gallons Spilled by Facility Type



Hazardous Substance Spills at Regulated vs. Unregulated Facilities

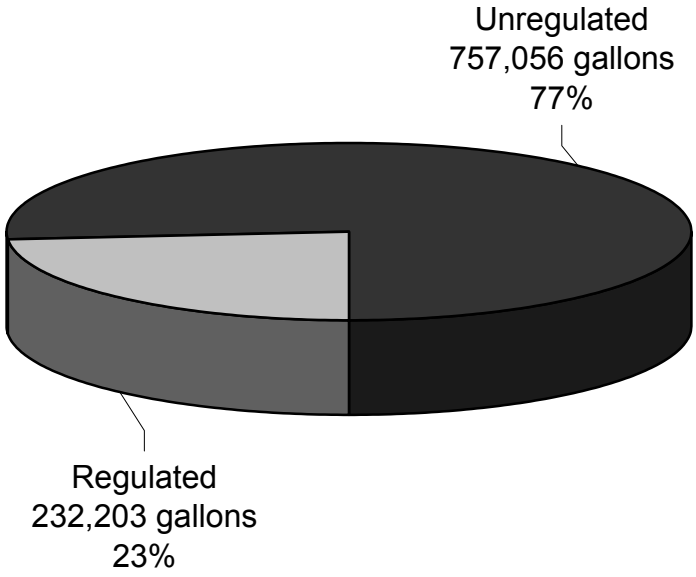
	Facility Type					
	Regulated		Unregulated		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	94	14,221	235	40,995	329	55,216
1997	115	27,936	165	18,939	280	46,875
1998	175	23,265	211	255,099	386	278,364
1999	86	12,758	183	169,525	269	182,283
2000	89	51,830	203	48,399	292	100,229
2001	107	89,956	305	203,361	412	293,317
2002	135	12,237	176	20,738	311	32,975
Total	801	232,203	1,478	757,056	2,279	989,259

Number of Spills at Regulated vs. Unregulated Facilities



- 65% of the hazardous substance spills occurred at unregulated facilities and account for 77% of the total volume released.

Gallons Spilled at Regulated vs. Unregulated Facilities

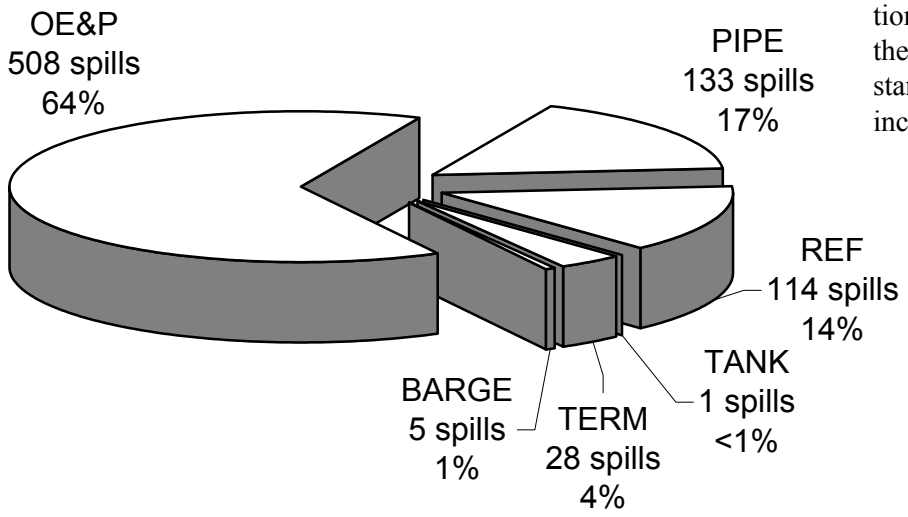


Hazardous Substance Spills at Regulated Facilities

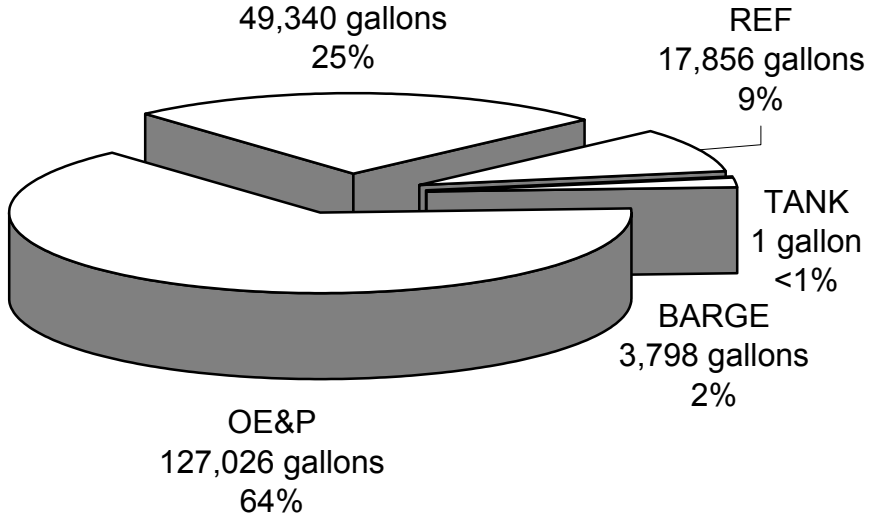
	BARGE		OE&P		PIPE		REF		TANK		TERM		TOTAL	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	1	2	46	8,135	24	3,003	20	490			3	2,591	94	14,221
1997	1	600	71	17,854	22	313	18	8,577			3	592	115	27,936
1998	1	195	112	20,296	28	1,866	28	851			3	54	172	23,262
1999			33	2,477	25	7,964	12	648			13	1,623	83	12,712
2000	1	1	63	41,147	11	7,631	11	3,037	1	1	1	3	88	51,820
2001	1	3,000	67	26,489	17	28,493	14	2,716			5	256	104	60,954
2002			116	10,628	6	70	11	1,537					133	12,235
Total	5	3,798	508	127,026	133	49,340	114	17,856	1	1	28	5,119	789	203,140

Number of Spills by Facility Type

- Thirty-five percent (35%) of the hazardous substance spills occurred at regulated facilities. Oil exploration and production facilities were the major source of hazardous substance spills in terms of number of incidents and total volume released.



Gallons Spilled by Facility Type



Hazardous Substance Spills from Unregulated Facilities

- Vehicles (commercial vehicles, tanker trucks) account for 43% of the hazardous substance releases and 24% of the volume loss. Mining operations account for 14% of the hazardous substance releases and 54% of the volume loss.

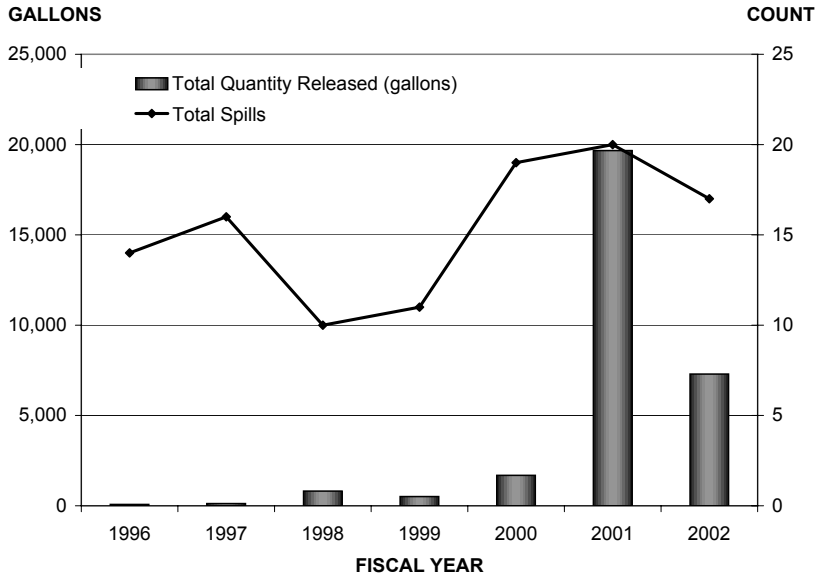
	1996		1997		1998		1999		2000		2001		2002		Cumulative Total	
FacilityType	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
Air Transportation	3	77	1	1	5	356	4	1,612	5	3,401	3	8	6	7,922	27	13,377
Cannery							1	500	2	2,020					3	2,520
Farm/Aquaculture													1	1	1	1
Gas Station	1	1					2	86	6	398					9	485
Log Processing	1	0	3	4,600											4	4,600
Maintenance Yard/Shop											1	25	9	161	10	186
Mining Operation	6	10,556	11	1,066	43	247,548	27	123,313	16	8,942	22	27,416	50	6,861	175	425,702
Oil Terminal Facility			1	10	2	250	3	25,452	5	552	5	97	1	30	17	26,391
Other	68	13,884	43	6,865	34	3,784	38	5,746	42	5,353	61	4,996	21	4,126	307	44,754
Power Generation	2	101	4	714	1	15	2	28	1	140	1	101	1	15	12	1,114
Railroad Operation			1	100	1	10	1	80	1	20,000	1	1,020			5	21,210
Refinery Operation	1	1	1	50			1	6,500					1	300	4	6,851
Residence	1	1	1	40							1	5			3	46
School							1	20							1	20
Transmission Pipeline	23	6,140	5	262	1	150	4	370	6	304	4	33,003	4	37	47	40,266
Unknown	17	447	7	125	9	965	4	507	8	61	9	776	2	4	56	2,885
Vehicle	86	8,475	68	4,274	96	1,597	71	4,771	68	5,184	111	162,313	38	970	538	187,584
Vessel	1	5	4	552	2	2	1	11	4	217	6	1,590	1	10	19	2,387
Water/Wastewater Facility	1	300	1	10	1	200	1	1	4	1,616	1	200			9	2,327
Total	211	39,988	151	18,669	195	254,877	161	168,997	168	48,188	226	231,550	135	20,437	1,247	782,706

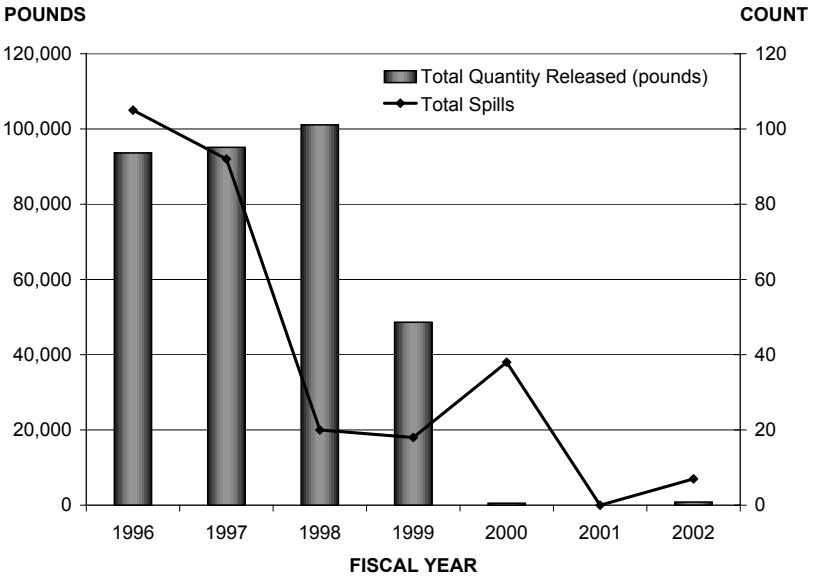
F. Extremely Hazardous Substances

- A 2002 survey of Tier Two reporting facilities (under the Community Right-to-Know Act) indicated that there are 809 facilities that store reportable quantities of hazardous substances in Alaska. This does not include transportation facilities which are exempt from Tier Two reporting. Reportable substances include explosives, poisons, flammable solids, radioactive substances, compressed gases, and substances which require a material safety data sheet (MSDS).
- EHS chemicals most commonly stored and used in Alaska include chlorine, ammonia, and sulfuric acid.
- The state experiences an average of 62 EHS releases per year, the majority of which are are less than 10 gallons or 1 pound in size.
- The four prevalent EHSs released in the state are Ammonia (39%), Sulfur Dioxide (25%), Chlorine (18%) and Sulfuric Acid (12%).

Number of EHS Releases and Total Volume Released

	Reported in Gallons		Reported in Pounds	
Fiscal Year	*count*	*gallons*	*count*	*pounds*
1996	14	76	105	93,613
1997	16	120	92	95,122
1998	10	813	20	101,071
1999	11	509	18	48,645
2000	19	1,685	38	537
2001	20	19,668		
2002	17	7,295	7	836
Total	107	30,166	280	339,824
Average	15	4,309	47	56,637



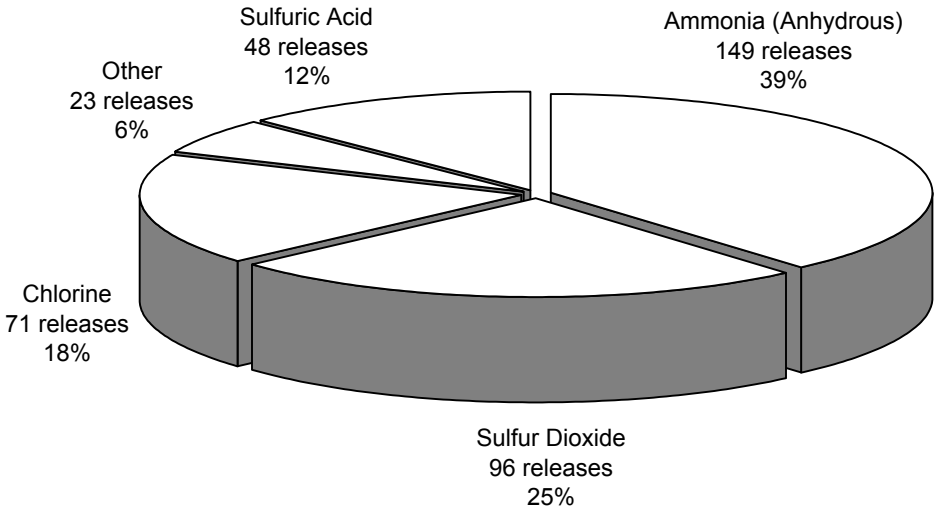


EHS Releases by Substance

EHS	Total Count	Reported in Gallons		Reported in Pounds	
		count	*gallons*	*count*	*pounds*
Ammonia (Anhydrous)	149	21	24,979	128	336,295
Chlorine	71	16	1,075	55	121
Formaldehyde	1	1	1		
Hydrazine (Anhydrous)	1	1	1		
Hydrochloric Acid	5	5	1,980		
Hydrofluoric Acid	2	2	2		
Hydrogen Peroxide	2	2	351		
Hydrogen Sulfide	2			2	2
Phosphoric Acid, Dimethyl 4-(Methylthio)	1	1	2		
Sodium Azide (Solid)	1	1	1		
Sodium Cyanide (Solid)	2	2	520		
Sodium Cyanide (Solution)	3	3	725		
Sulfur (Dioxide)	96	1	1	95	3,406
Sulfuric Acid	48	48	520		
Toluene 2,4-Diisocyanate	3	3	8		
Total	387	107	30,166	280	339,824

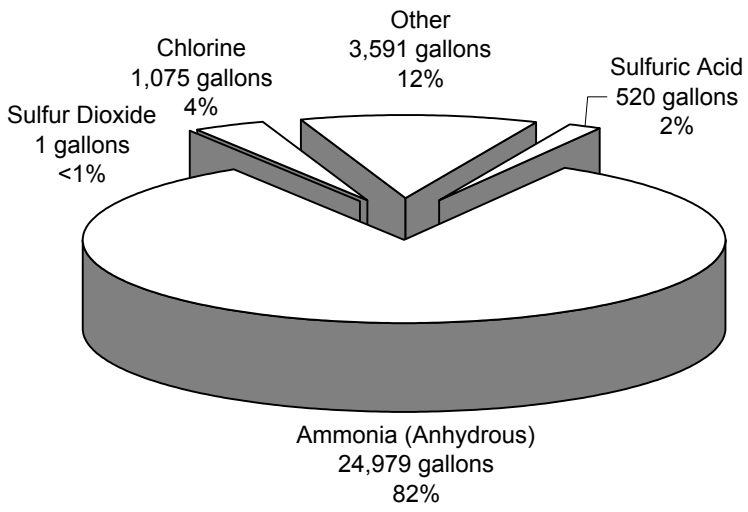
NOTE: Sulfur dioxide releases occurred primarily while the two pulp mills in the Southeast were in operation. Since deactivation of the two facilities, sulfur dioxide releases have been reduced significantly.

Number of Releases by Substance



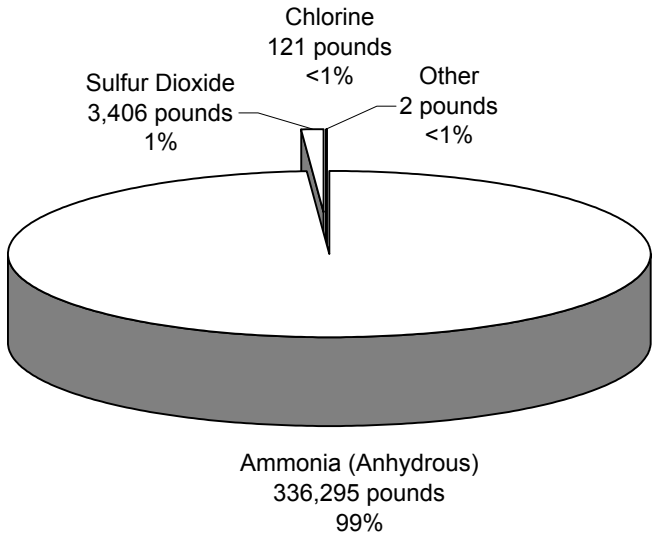
EHS Releases by Substance *(continued)*

Gallons Released by Substance



- Anhydrous ammonia was the most prevalent EHS in terms of total gallons (82%) and pounds released (99%).

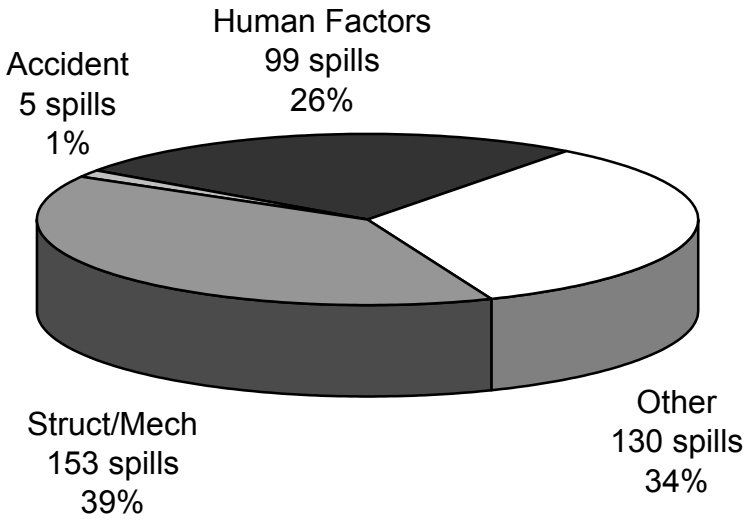
Pounds Released by Substance



EHS Releases by Cause

	Number of EHS Spills by Cause				
FY	*Accident*	*Human Factors*	*Other*	*Struct/Mech*	**Total**
1996		20	39	60	119
1997	1	40	18	49	108
1998	2	12	4	12	30
1999		15	8	6	29
2000		3	48	6	57
2001		4	9	7	20
2002	2	5	4	13	24
Total	5	99	130	153	387

Number of Releases by Cause

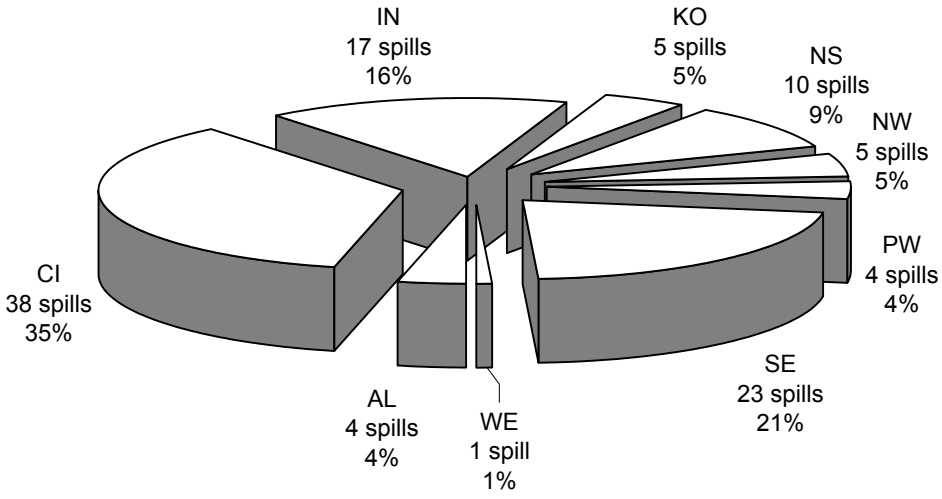


- Structural/Mechanical and "Other" causes accounted for the majority of the releases (73%).

EHS Releases by Subarea

Subarea	Number of Spills FY 96-02
Aleutian (AL)	10
Bristol Bay (BB)	1
Cook Inlet (CI)	150
Interior Alaska (IN)	17
Kodiak Island (KO)	5
North Slope (NS)	11
Northwest Arctic (NW)	5
Prince William Sound (PW)	7
Southeast Alaska (SE)	179
Western Alaska (WE)	2
Total	387

Number of Releases by Subarea

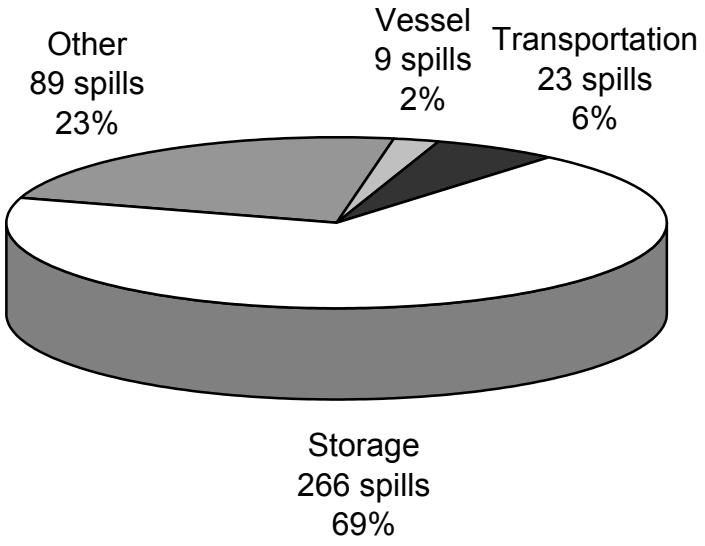


- 72% of the EHS releases occurred in the Southeast, Cook Inlet and Interior subareas, with 35% of the spills in Cook Inlet.

EHS Releases by Facility Type

	Number of EHS Spills by Facility Type				
FY	*Vessel*	*Transportation*	*Storage*	*Other*	**Total**
1996		4	75	40	119
1997	3	2	92	11	108
1998	2	3	17	8	30
1999	2	3	18	6	29
2000		2	53	2	57
2001		1	3	16	20
2002	2	8	8	6	24
Total	9	23	266	89	387

Number of Releases by Facility Type



- Storage and Other facilities accounted for 92% of the total number of EHS releases in Alaska.
- EHS releases from Transportation facilities and Vessels are not that prevalent, and accounted for only 8% of the total number of incidents.

G. Process Water

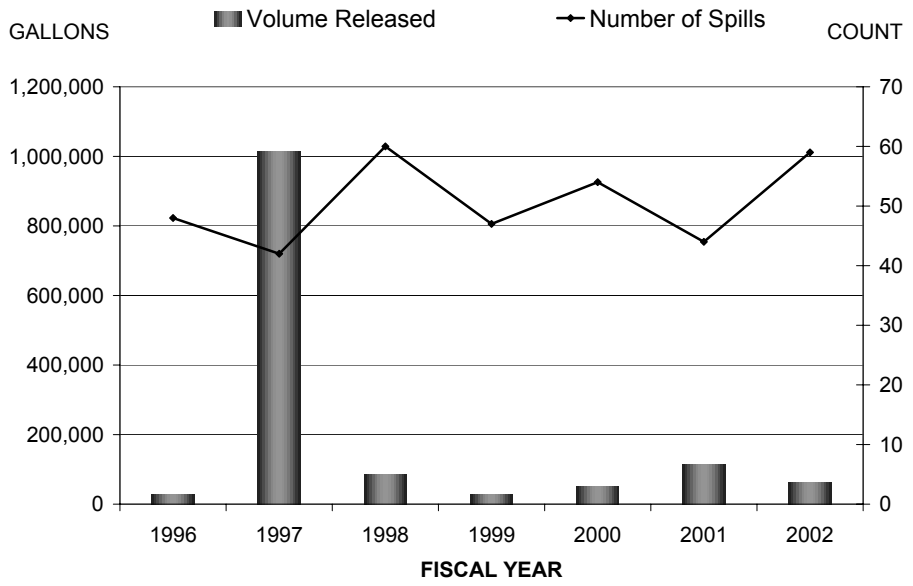
- This report includes only unpermitted process water spills. For the purpose of this report, "Process Water" spills are typically associated with oil exploration and production operations and mining operations. The definition differs for each operation and process water spills are considered reportable as a hazardous substance discharge. The following definitions apply to each type of operation:

  Process Water for Oil Exploration and Production Operations: Process water includes seawater (and occasionally freshwater) and produced water. Seawater is injected into a formation to pressurize the reservoir and force the oil toward the oil production wells. Gelled water is seawater and freshwater that is mixed with a gelling substance to increase the viscosity of the fluid for a number of purposes. Seawater is also used to maintain the existing wells or to detect leaks in pipelines. Produced water is the water mixture consisting of oil, gas, and sand that is pumped from oil production wells. The percentage of crude oil occurring in process water can vary somewhat based on the source of the spill.

  Process Water for Mining Operations: Process water for mining operations includes water taken from tailing ponds for the milling process (reclaim water), water that has been through the water treatment plant but not the sand filter (process water), water that has been through both the water treatment and sand filter (discharge water), water mixed with ground ore materials (slurry) or water used in the milling and product recovery process (process solution water).

Number of Process Water Spills and Total Volume Spilled

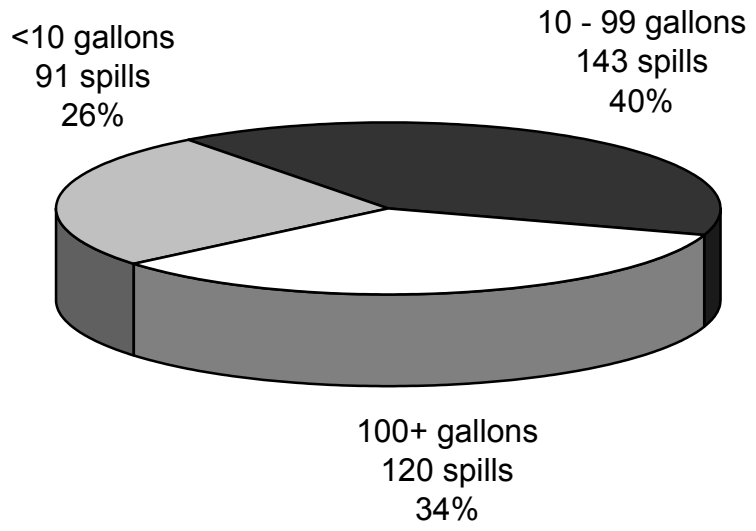
Fiscal Year	Total Spills	Total Quantity Released (gallons)
1996	48	28,493
1997	42	1,014,844
1998	60	86,398
1999	47	27,050
2000	54	51,105
2001	44	114,421
2002	59	62,896
Total	354	1,385,207
Average	51	197,887



Process Water Spills by Size Class

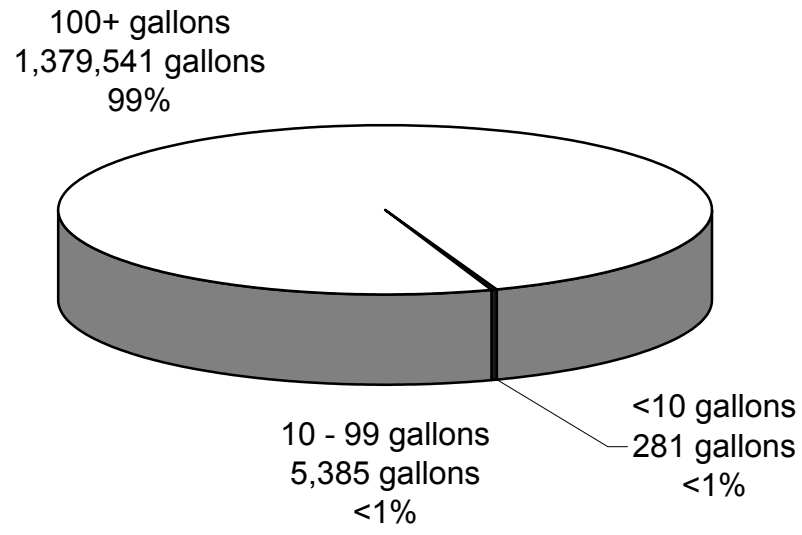
	Spill Size							
	<10 gallons		10 - 99 gallons		100+ gallons		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996	16	56	19	671	13	27766	48	28493
1997	15	43	15	654	12	1014147	42	1014844
1998	14	53	25	795	21	85550	60	86398
1999	7	32	23	787	17	26231	47	27050
2000	12	35	26	1007	16	50063	54	51105
2001	10	22	17	746	17	113653	44	114421
2002	17	40	18	725	24	62131	59	62896
Total	91	281	143	5,385	120	1,379,541	354	1,385,207

Number of Spills by Spill Size



- While nearly two-thirds of process water spills are less than 100 gallons in size, those spills in the 100+ gallons range clearly accounted for nearly 100% of the total volume spilled.

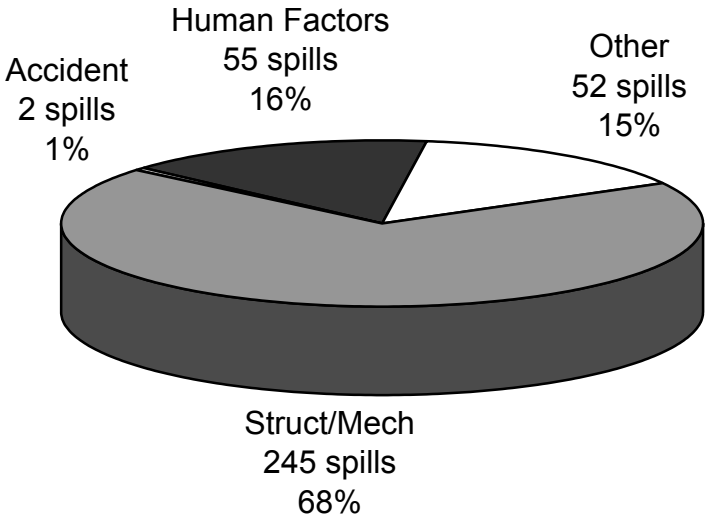
Gallons Spilled by Spill Size



Process Water Spills by Cause

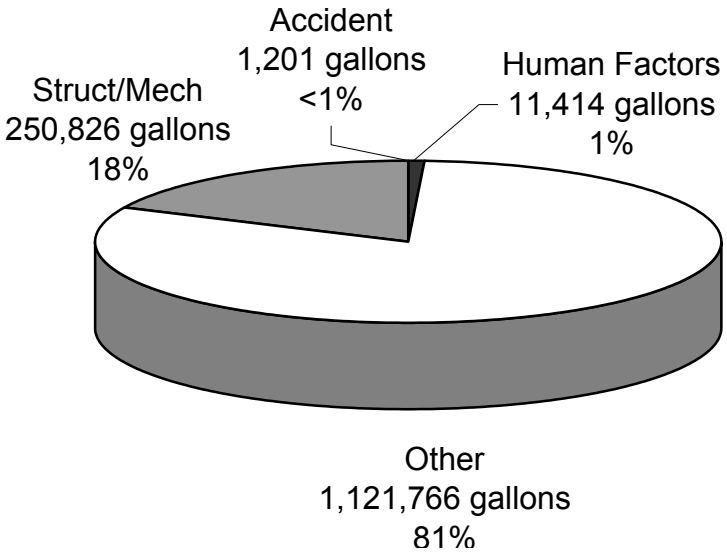
	Cause									
	Accident		Human Factors		Other		Struct/Mech		Total	
FY	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*	*count*	*gallons*
1996			9	1,113	8	1,810	31	25,570	48	28,493
1997	1	1	3	293	7	1,004,390	31	10,160	42	1,014,844
1998			9	763	4	63,137	47	22,498	60	86,398
1999			10	924	9	302	28	25,824	47	27,050
2000			10	2,503	8	25,147	36	23,455	54	51,105
2001			6	1,779	5	1,080	33	111,562	44	114,421
2002	1	1,200	8	4,039	11	25,900	39	31,757	59	62,896
Total	2	1,201	55	11,414	52	1,121,766	245	250,826	354	1,385,207

Number of Spills by Cause



- Most process water spills were caused by human factors, structural/ mechanical, or other causes. Accidents accounted for only 1% of the total number of incidents.
- Spills from "Other" causes resulted in 81% of the total volume of process water spilled.

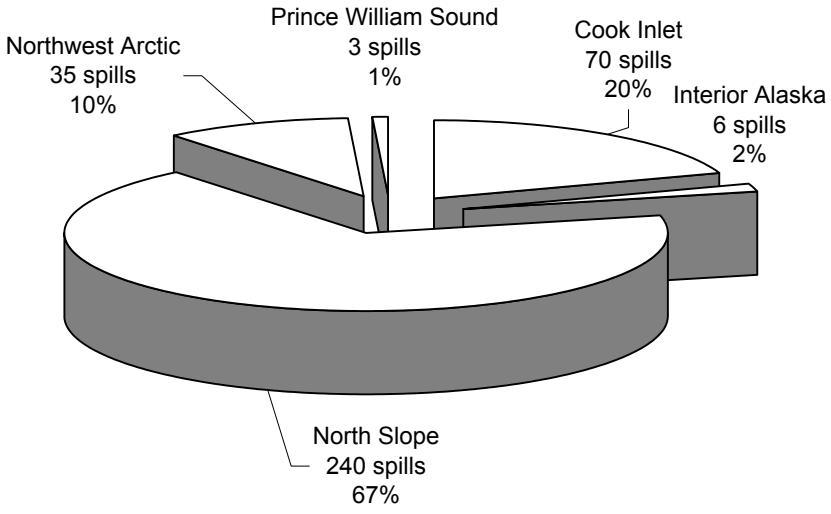
Gallons Spilled by Cause



Process Water Spills by Subarea

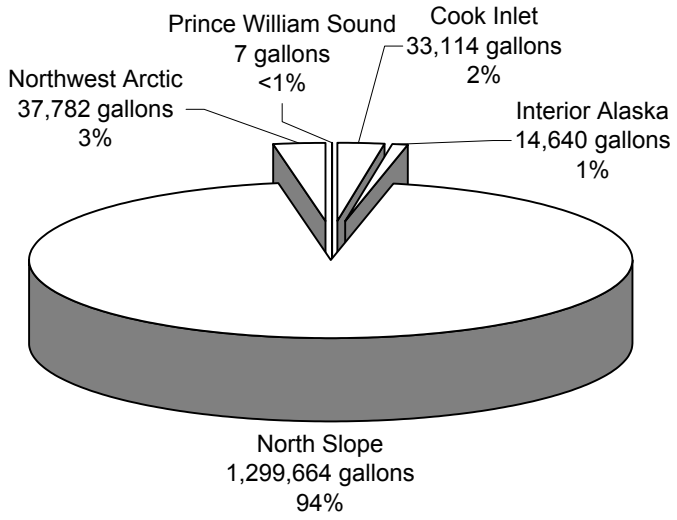
Subarea	Cumulative Total (FY96-02) *Number of Spills*	*Gallons Released*
Cook Inlet	70	33,114
Interior Alaska	6	14,640
North Slope	240	1,299,664
Northwest Arctic	35	37,782
Prince William Sound	3	7
Total	354	1,385,207

Number of Spills by Subarea



- North Slope and Cook Inlet subareas experienced the greatest number of process water spills.
- A single release of 994,000 gallons of process water occurred on the North Slope on March 17, 1997.

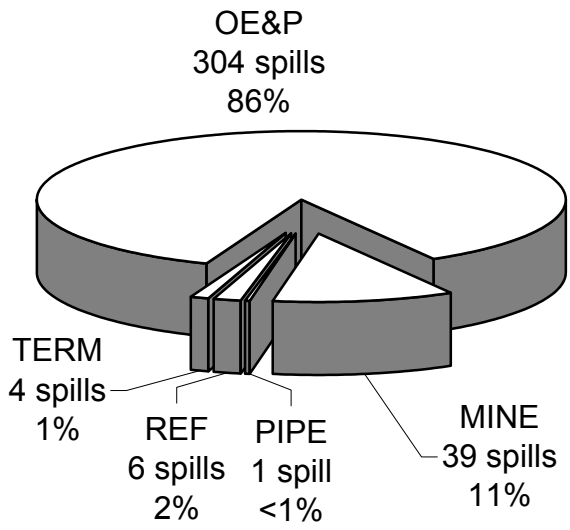
Gallons Released by Subarea



Process Water Spills by Facility Type

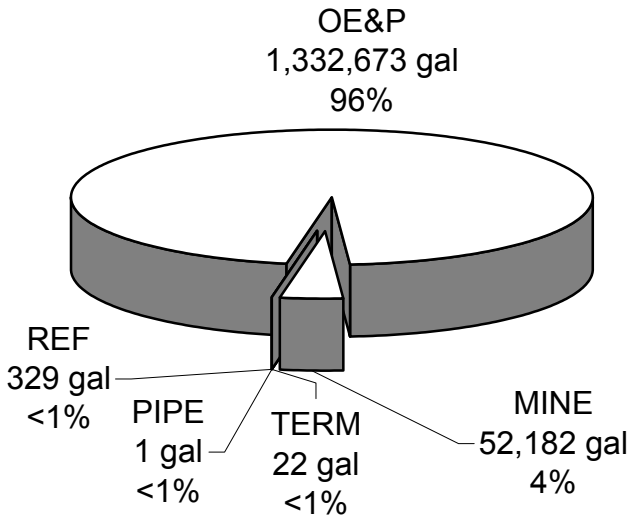
	PIPE		REF		TERM		OE&P		MINE		Cumulative Total	
FY	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons	count	gallons
1996			1	2			47	28,491			48	28,493
1997			1	1	3	7	38	1,014,836			42	1,014,844
1998			2	86	1	15	43	79,900	14	6,397	60	86,398
1999							45	27,030	2	20	47	27,050
2000			1	40			45	24,820	8	26,245	54	51,105
2001							40	111,856	4	2,565	44	114,421
2002	1	1	1	200			46	45,740	11	16,955	59	62,896
Total	1	1	6	329	4	22	304	1,332,673	39	52,182	354	1,385,207

Number of Spills by Facility Type



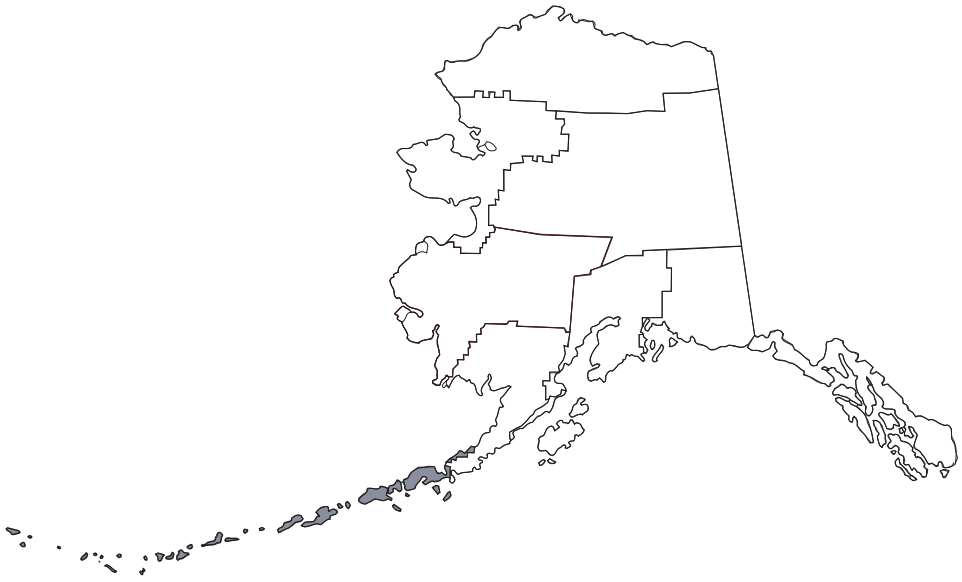
- Oil Exploration and Production facilities were clearly the major source of process water spills, and also accounted for the majority of the total volume spilled (96%).

Gallons Spilled by Facility Type



Section III: Spills by Subarea

A. Aleutians



The Aleutians Subarea includes the southern portion of the Alaska Peninsula as well as the Aleutian archipelago. The major islands in the region include Unimak, Unalaska, Umnak, Atka, Adak, Attu, and the Pribilof Islands of St. George and St. Paul. The region includes two Local Emergency Planning Districts (LEPD): the Aleutians East Borough LEPD and the Aleutian and Pribilof Islands LEPD. Major communities include the cities of Unalaska, Sand Point, and St. Paul. Industrial activity is limited to seafood processing, although Unalaska is a major port for freight into the region and a waypoint for freight shipments to Asia.

The total number of spills in the Aleutians subarea has been on a steady decline since FY96. The average number of spills greater than 1,000 gallons is two per year.

Largest Spill in the Subarea: The M/V Kuroshima spill on November 26, 1997 (FY98) resulted in a release of 39,000 gallons of Bunker C product at Summers Bay in Dutch Harbor.

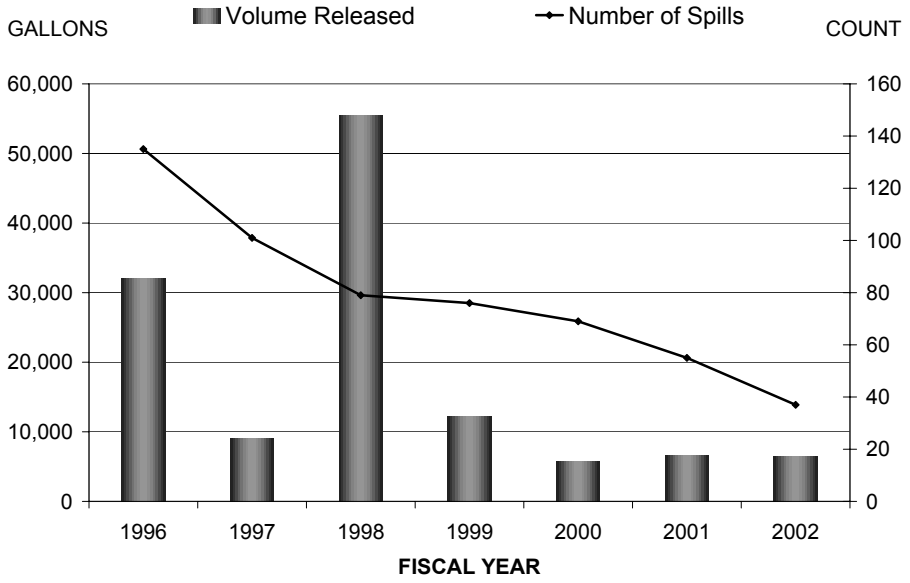
Discernible Trends:

- The number of spills per year for the Aleutians subarea are on a steady decline.
- Vessels contributed to 49 percent of the total number of spills in the Aleutians subarea, and also accounted for 59 percent of the total product released.
- The cause of 44 percent of the spills was Human Factors, although Accidents accounted for 51% of the total volume released.
- Almost all of the spills in the subarea involved noncrude oil, and nearly 98 percent of the total volume spilled consisted of noncrude oil products.

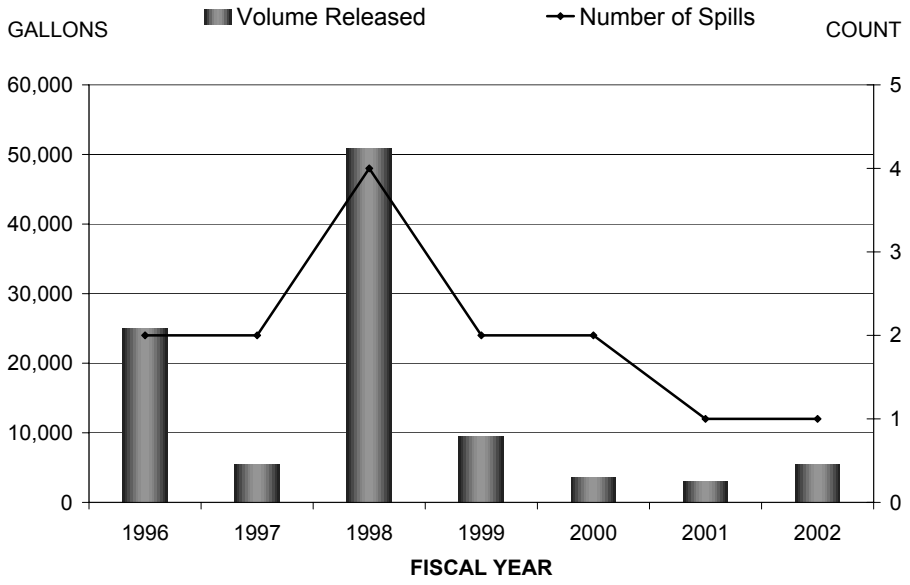
Spills Summary

	All Spills		Spills >1,000 gallons	
Fiscal Year	*Number*	*Total Gallons*	*Number*	*Total Gallons*
1996	135	32,027	2	25,000
1997	101	9,058	2	5,500
1998	79	55,470	4	50,875
1999	76	12,254	2	9,500
2000	69	5,789	2	3,529
2001	55	6,633	1	3,000
2002	36	6,443	1	5,500
Total	551	127,674	14	102,904
Average	79	18,239	2	14,701

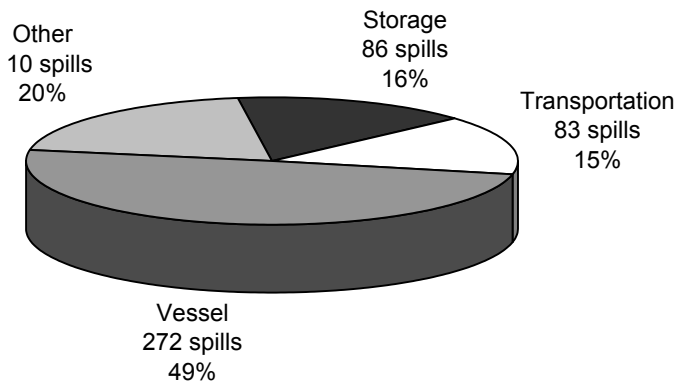
All Spills by Fiscal Year

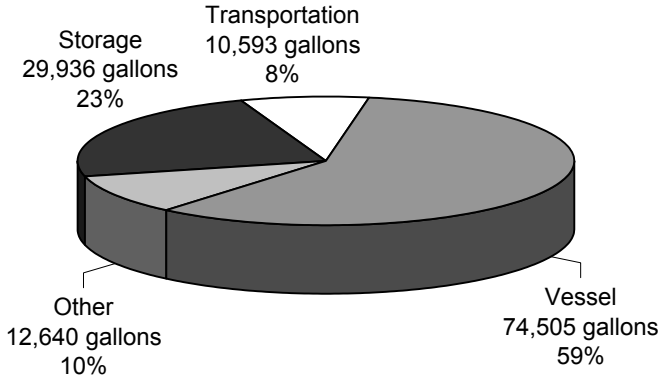


Spills >1,000 gallons

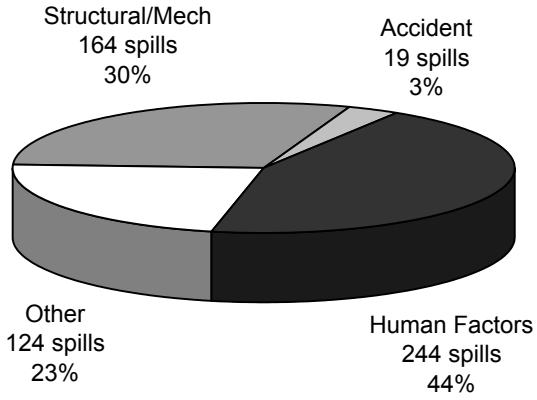


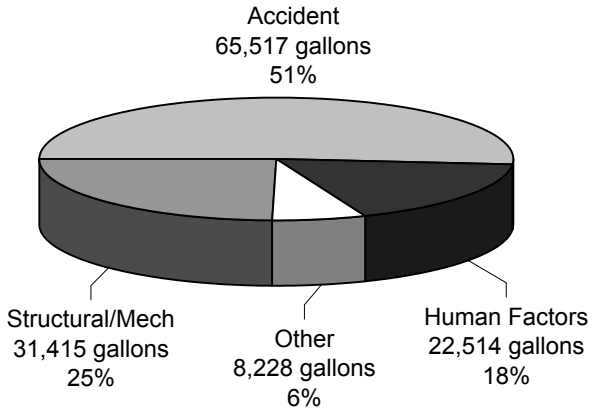
Aleutian Subarea Spills by Facility Type



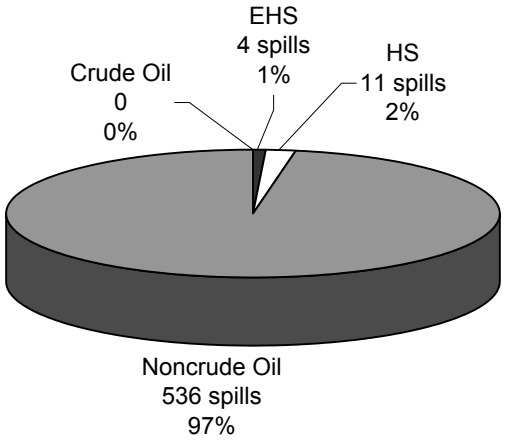


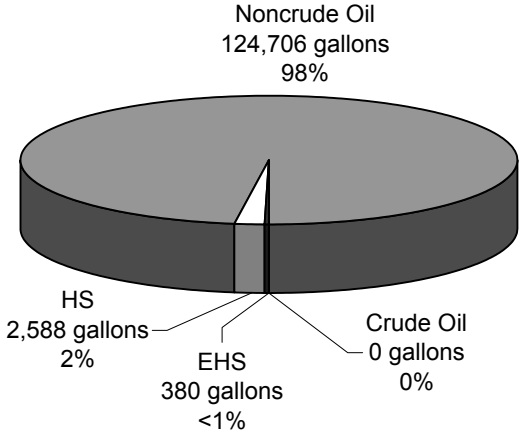
Aleutian Subarea Spills by Cause



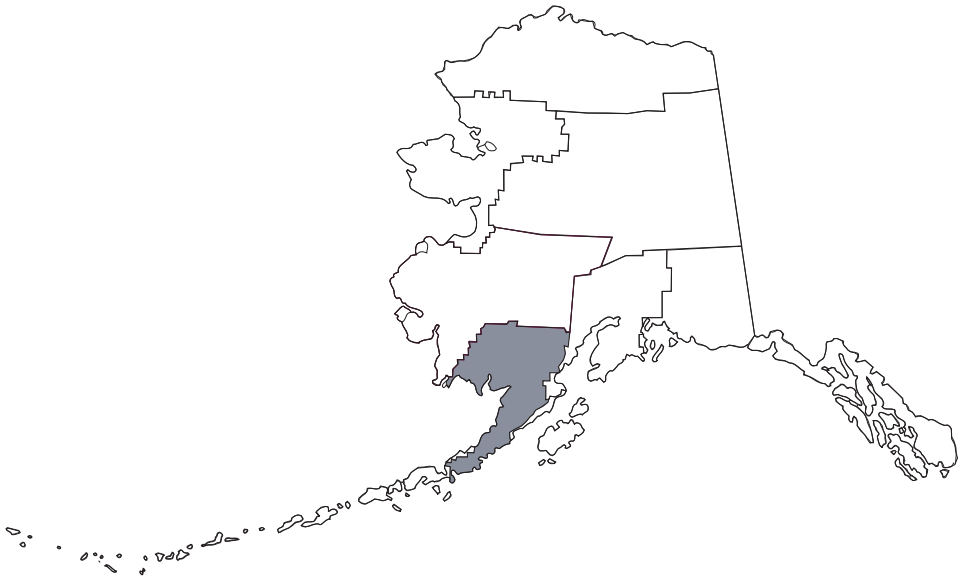


Aleutian Subarea Spills by Product





B. Bristol Bay



There are a total of 30 communities in the region (including the two boroughs), 27 Native and 3 non-Native.

Deliveries of noncrude oils are made to the villages in this area primarily by barges operating from Dutch Harbor or the Cook Inlet Region. Deliveries are ice dependent and do not occur as ice forms. Delivery of noncrude oil is made to the remote villages in this area primarily by small barges.

Largest Spill in the Subarea: The largest spill on record for this subarea is the Ivanof Bay spill which occurred on January 30, 2000. A total of 10,000 gallons of diesel was released.

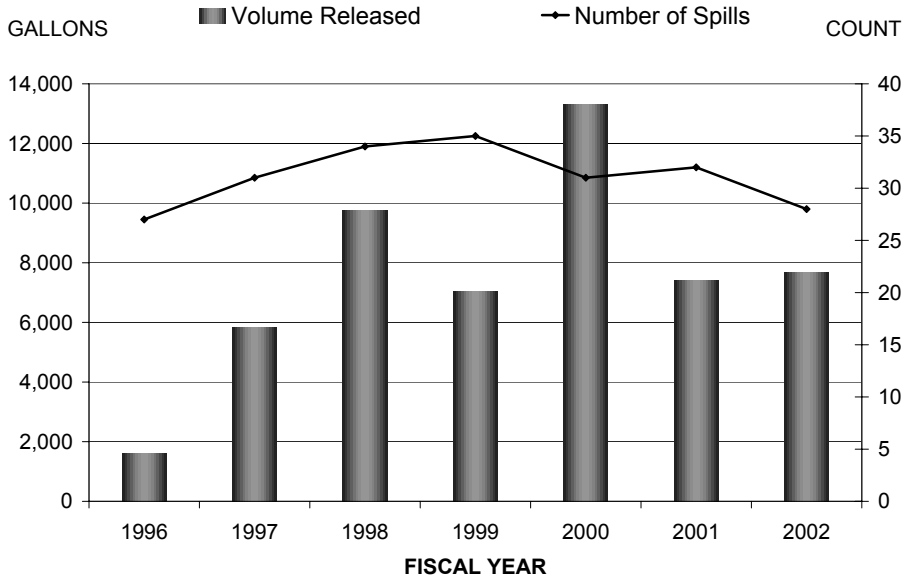
Discernible Trends:

- There were no significant trends for the subarea in terms of numbers of spills and total volume released.
- Fuel storage contributed to 43 percent of the total number of spills in the subarea, and also accounted for 76 percent of the total product released.
- The cause of 45 percent of the spills in the Bristol Bay subarea was associated with Structural/Mechanical problems, which also resulted in 69 percent of the total volume released.
- Almost all of the spills (97 percent) in the subarea involved noncrude oil, and 99 percent of the total volume spilled consisted of noncrude oil products.

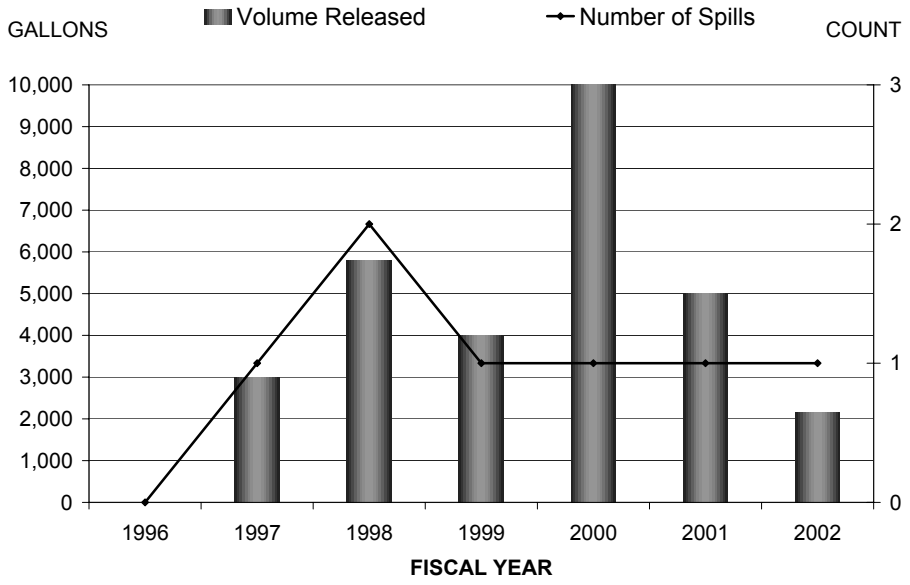
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	27	1,614	0	0
1997	31	5,843	1	3,000
1998	34	9,756	2	5,796
1999	35	7,044	1	4,000
2000	31	13,319	1	10,000
2001	32	7,420	1	5,000
2002	28	7,663	1	2,164
Total	218	52,659	7	29,960
Average	31	7,523	1	4,280

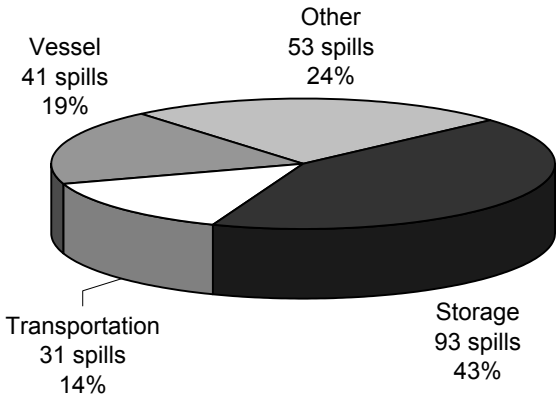
All Spills by Fiscal Year

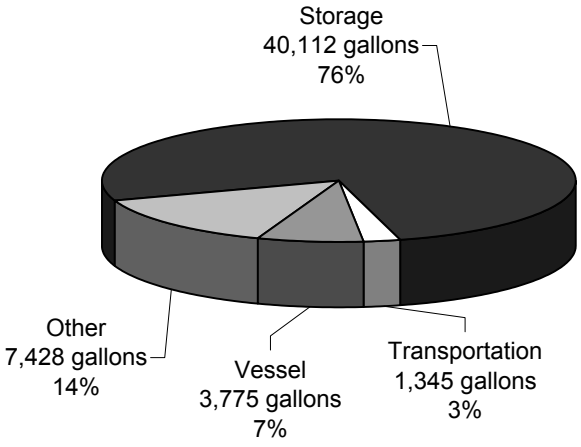


Spills >1,000 gallons

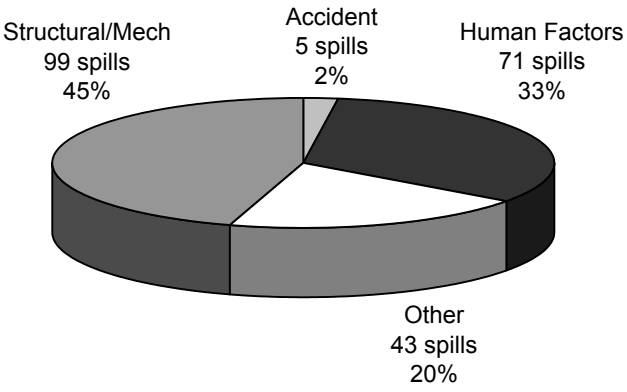


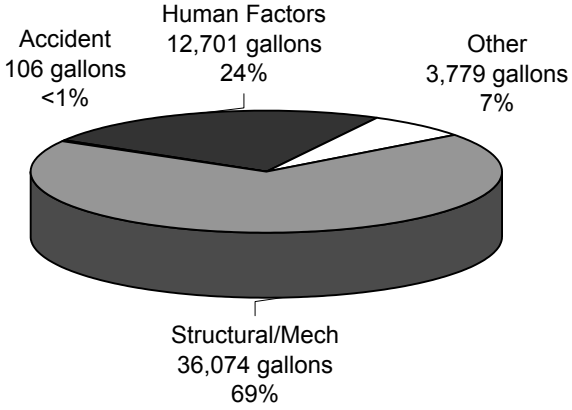
Bristol Bay Subarea Spills by Facility Type



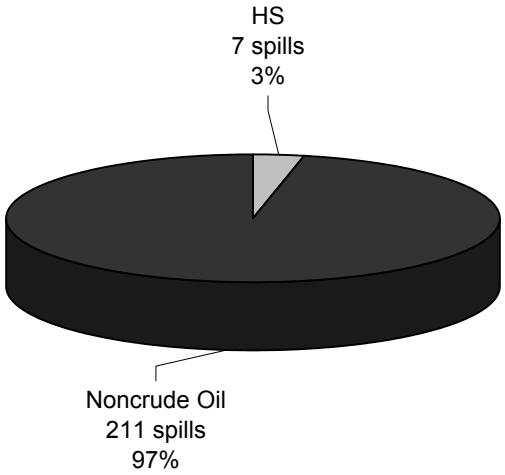


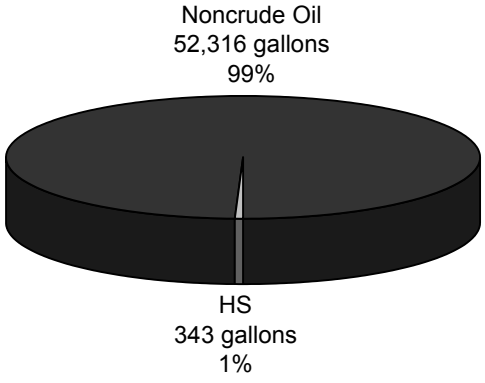
Bristol Bay Subarea Spills by Cause



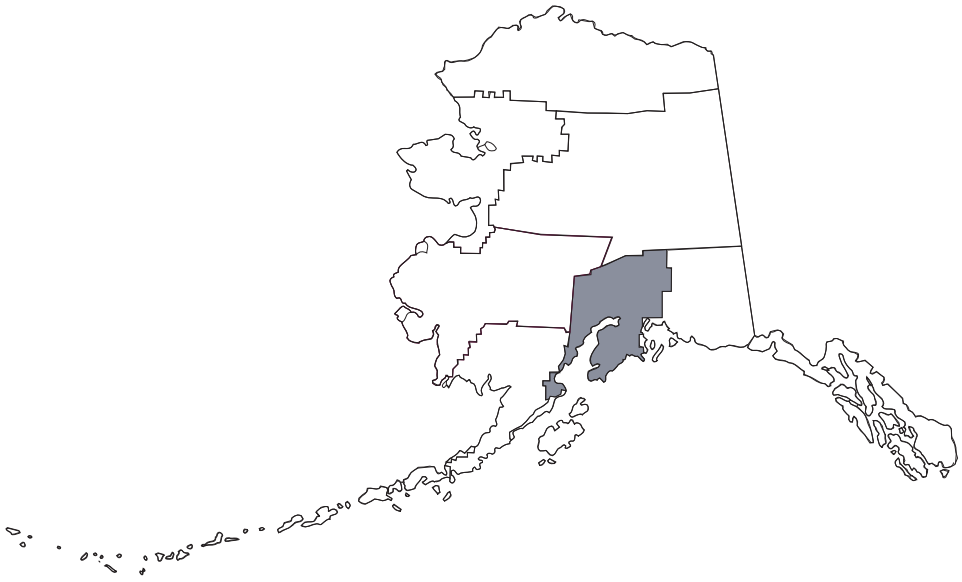


Bristol Bay Subarea Spills by Product





C. Cook Inlet



Most oil activities are concentrated in the East Forelands area, between Kenai and Nikiski, and along Trading Bay, between West Foreland and North Foreland. Offshore platforms are also located in Trading Bay and in the upper portions of Cook Inlet.

Several submerged pipelines cross the Inlet in this area as well. Noncrude products are stored in tank farms in Anchorage and other areas of upper Cook Inlet. The area includes onshore and offshore crude oil production facilities, major crude oil and non-crude oil storage, and terminal facilities in Anchorage, Nikiski, and Redoubt Bay.

The region also contains the southern half of the Alaska Railroad system which transports passengers and cargo, including oil and hazardous substances, from Seward and Whittier to Anchorage and Fairbanks.

The majority of the State's highway system is also located in this region with major roadways linking Anchorage with communities to the south on the Kenai Peninsula and to the north in the Matanuska-Susitna Borough and beyond.

The region averages approximately 600 spills per year, with an average of 71,480 gallons released per year. The subarea also averages six spills greater than 1,000 gallons per year.

Largest Spill in the Subarea: The largest spill in this subarea (pre-spills database era) was the T/V Glacier Bay incident on July 2, 1987 with 210,000 gallons of crude oil released.

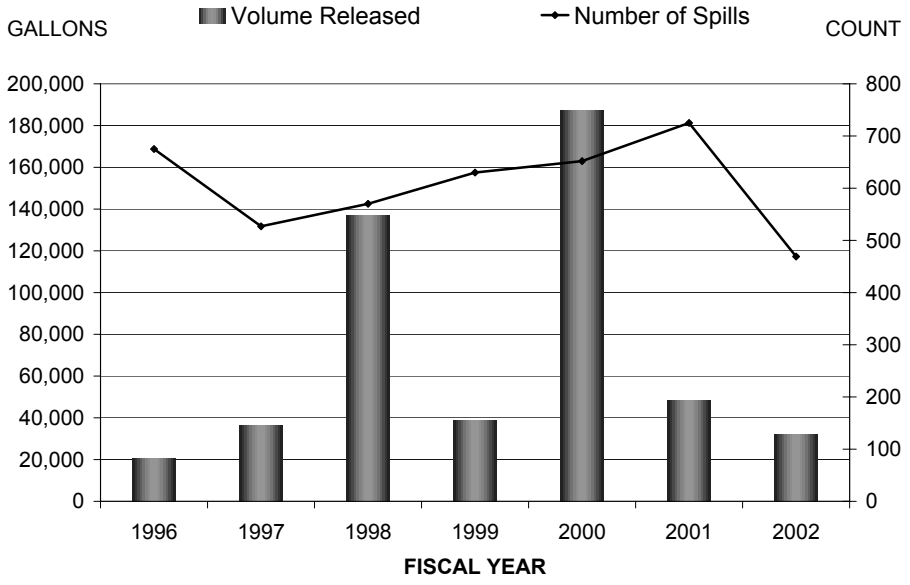
Discernible Trends:

- Transportation and Storage facilities accounted for 41 percent and 39 percent of the total spills, respectively, although spills from Transportation facilities accounted for 73 percent of the total volume released
- Structural/Mechanical causes (50 percent), followed by Human Factors causes (31 percent) were the two leading causes of spills for the Cook Inlet subarea.
- Noncrude oil spills (87 percent) constituted the majority of the type of product spilled in the subarea, and accounted for 79 percent of the total volume released during this reporting period.

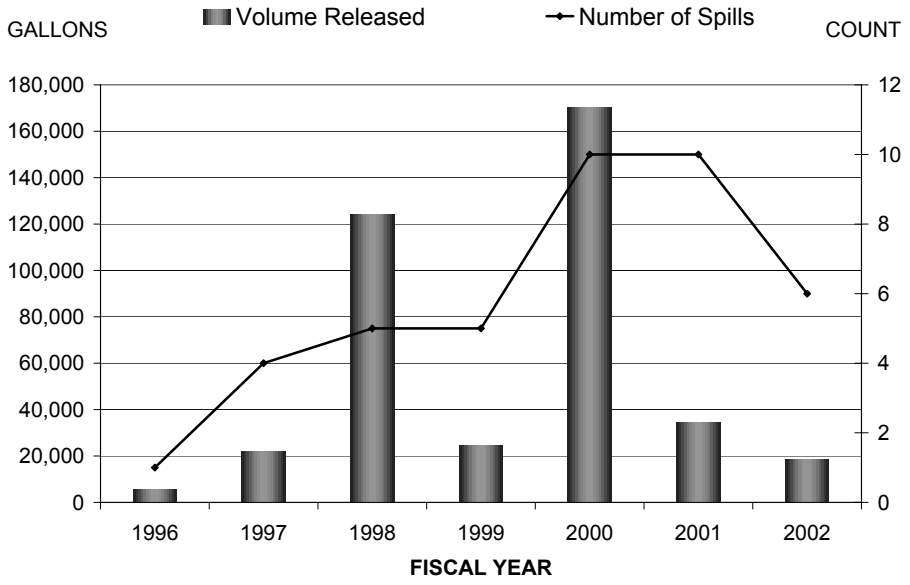
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	675	20,544	1	5,700
1997	527	36,418	4	22,134
1998	570	136,814	5	124,100
1999	630	38,844	5	24,720
2000	652	187,332	10	170,278
2001	725	48,214	10	34,386
2002	466	32,193	6	18,560
Total	4,245	500,359	41	399,878
Average	606	71,480	6	57,125

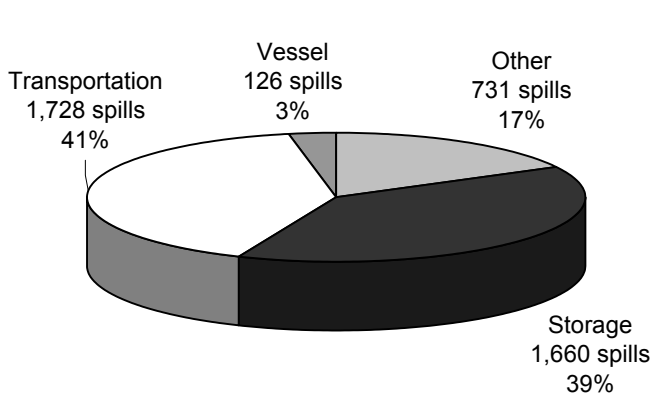
All Spills by Fiscal Year

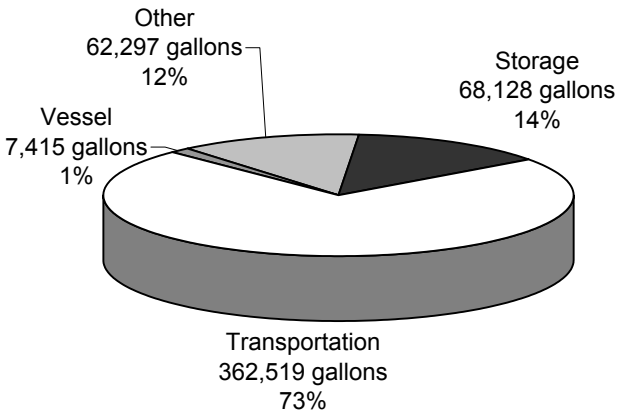


Spills >1,000 gallons

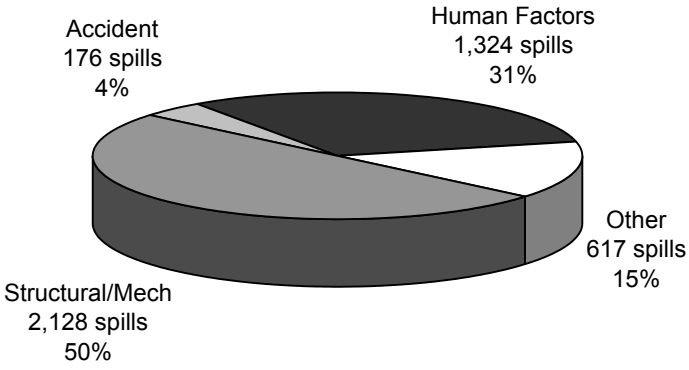


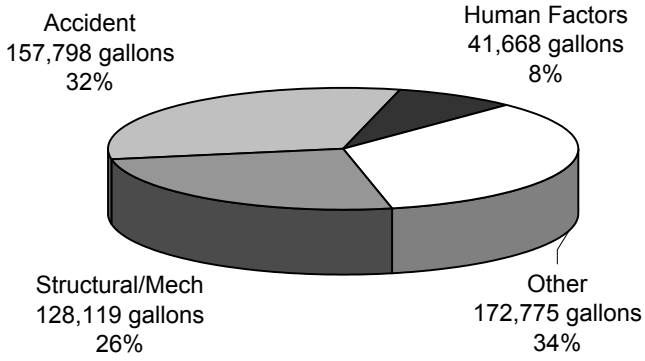
Cook Inlet Subarea Spills by Facility Type



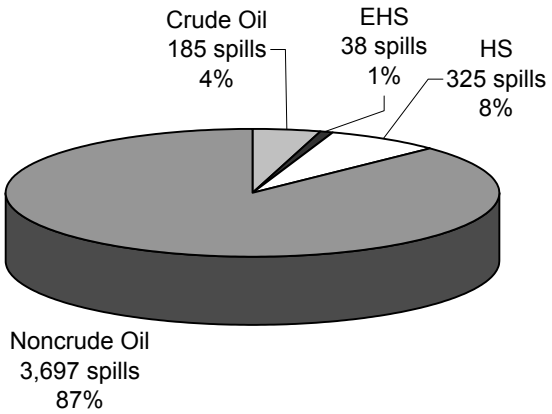


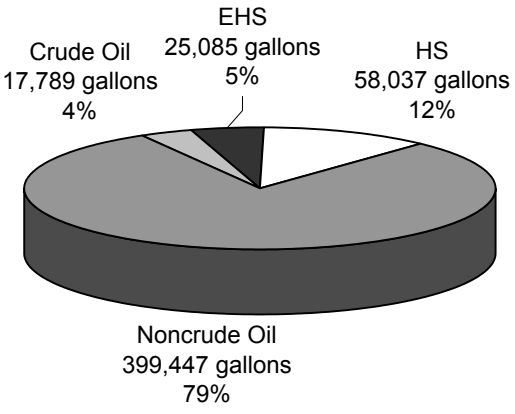
Cook Inlet Subarea Spills by Cause



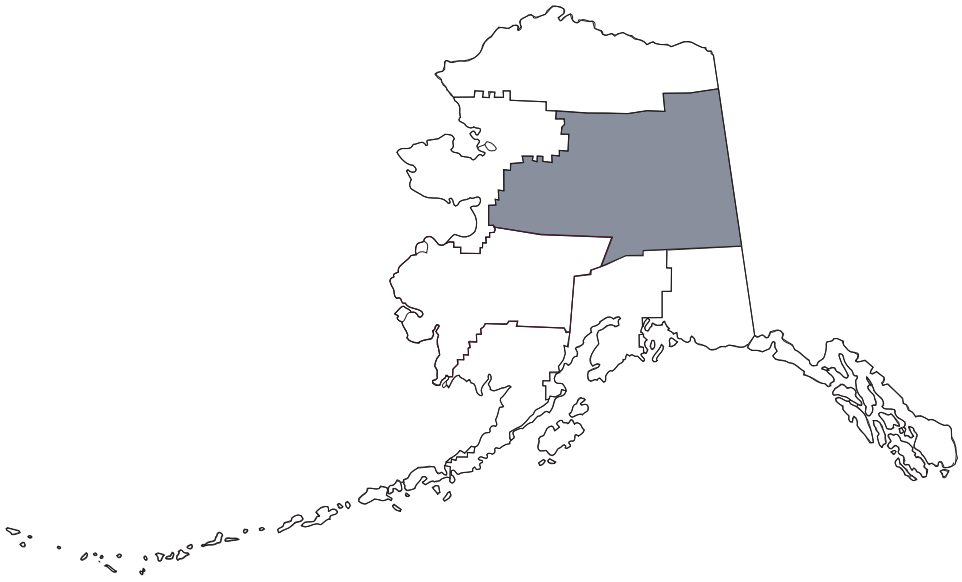


Cook Inlet Subarea Spills by Product





D. Interior Alaska



Delivery of noncrude oil is made to the remote villages in this area primarily by small barges (normally 300,000 gallon capacity). Deliveries are ice-dependent and do not occur as ice forms. The Trans Alaska Pipeline System also transits through the area enroute to the terminus at Valdez. The Williams oil refinery is located in North Pole, and the majority of petroleum products are shipped via the railroad.

There are a total of 57 communities in the region (including the two boroughs), 31 Native and 26 non-Native.

The region averages approximately 389 spills per year, with an average of 89,472 gallons released per year. Excluding the TAPS Milepost 400 release in FY02, the average volume released per year was 48,672 gallons. The subarea also averages six spills greater than 1,000 gallons per year.

Largest Spill in the Subarea: The largest spill in this subarea was the TAPS Milepost 400 bullet hole incident on October 4, 2001 with 285,600 gallons of crude oil released.

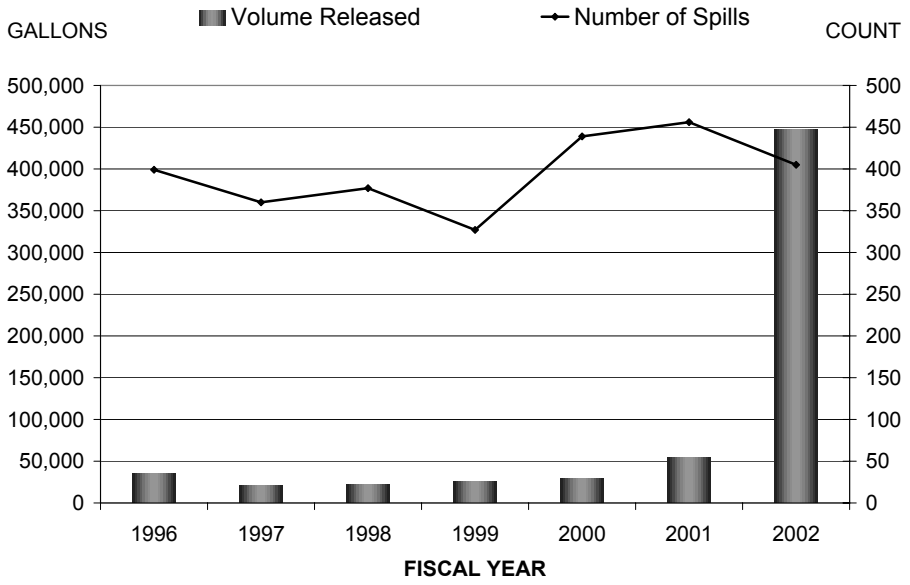
Discernible Trends:

- The number of spills in the Interior subarea remained fairly constant over the seven-year period.
- Transportation facilities accounted for nearly 57 percent of the total spills, and also accounted for 86 percent of the total volume released.
- Structural/Mechanical causes (63 percent) were the predominant cause, although Human Factors causes accounted for 55 percent of the total volume released.
- Noncrude oil spills (83 percent) constituted the majority of the type of product spilled in the subarea; however, crude oil (with the single TAPS Milepost 400 spill of 285,600 gallons) accounted for 47 percent of the total volume released during this reporting period.

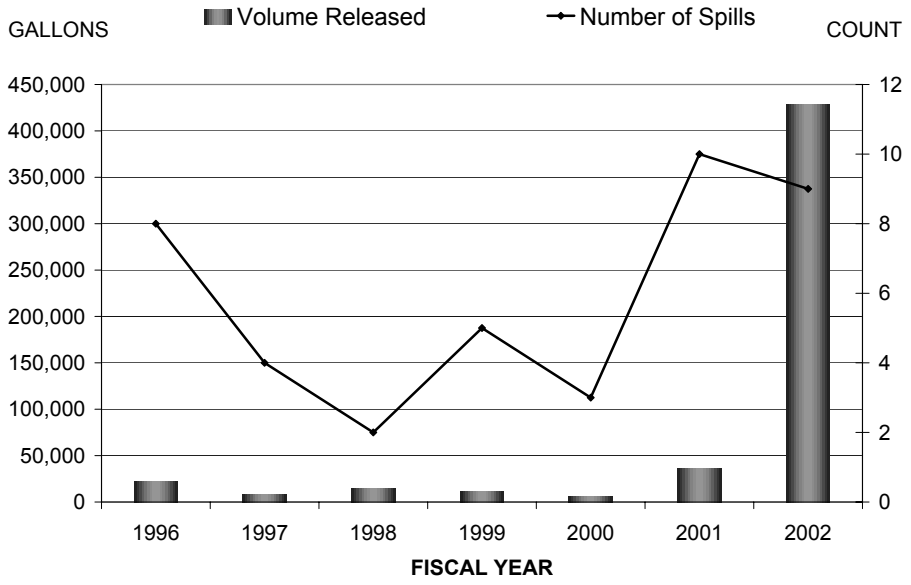
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	399	34,806	8	21,740
1997	360	20,693	4	7,900
1998	377	22,342	2	14,950
1999	327	25,375	5	10,876
2000	438	28,791	3	6,400
2001	452	50,288	10	35,759
2002	373	444,006	9	428,237
Total	2,726	626,301	41	525,862
Average	389	89,472	6	75,123

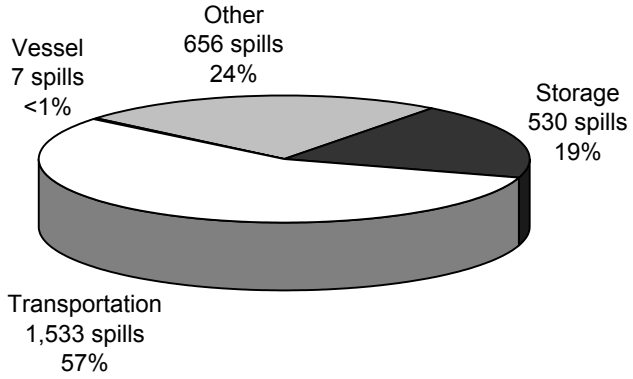
All Spills by Fiscal Year

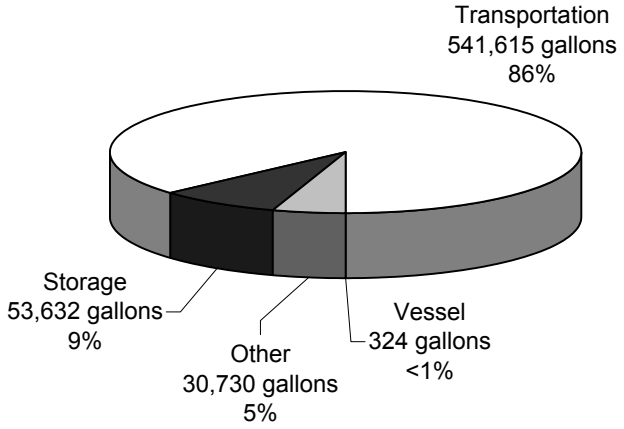


Spills >1,000 gallons

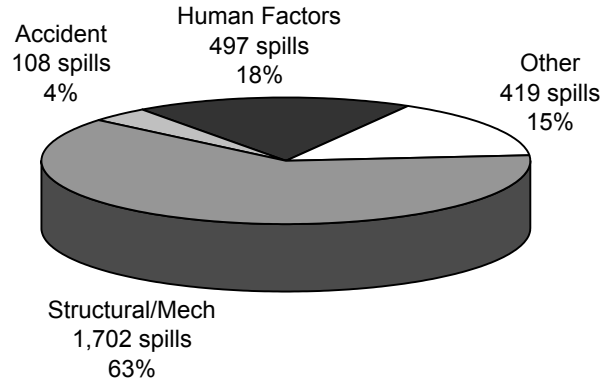


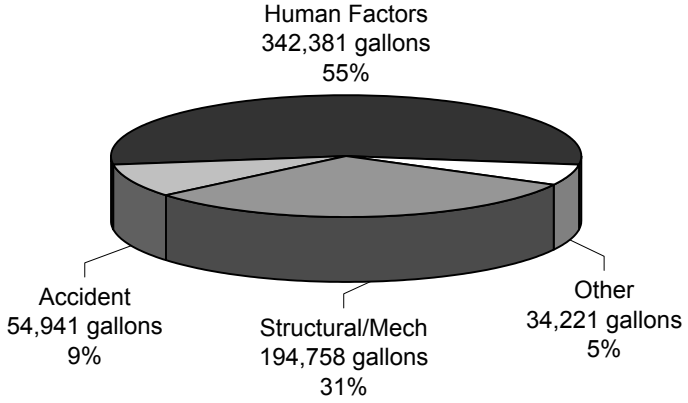
Interior Subarea Spills by Facility Type



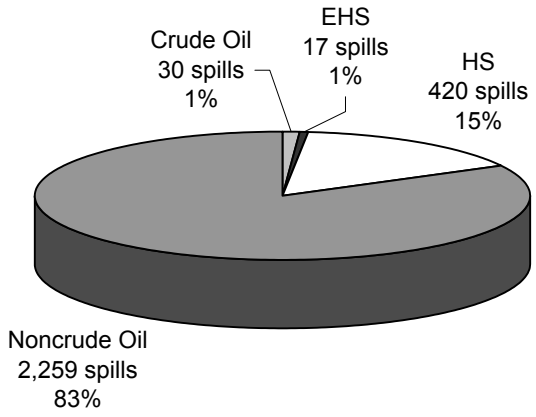


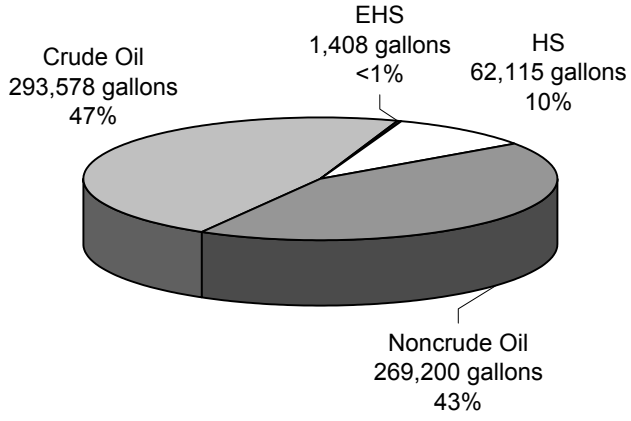
Interior Subarea Spills by Cause



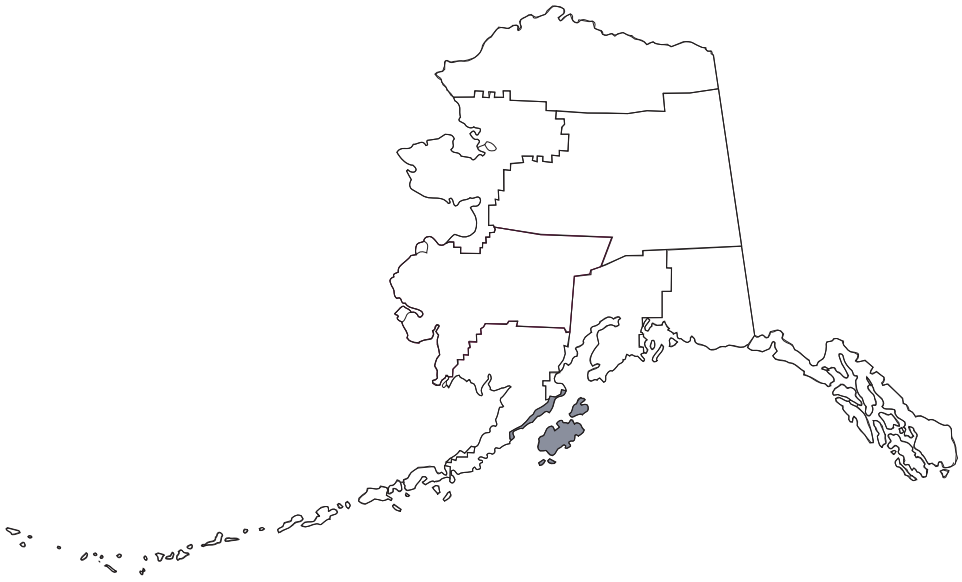


Interior Subarea Spills by Product





E. Kodiak Island



The waters and coastline of the Kodiak Subarea are vulnerable to the introduction of petroleum products, oil, or hazardous chemicals from a variety of sources. Marine vessel fuel, jet fuel, lubricants, toxic chemicals, crude oil and other noncrude petroleum products are transported through the Kodiak Subarea and adjacent waters. Noncrude fuels and several hazardous chemicals are stored in facilities throughout the subarea in varying quantities. Pollution risks faced by the Kodiak Subarea include spills of all sizes and severity as well as chronic leaks or low-volume inputs. While chronic spills may be less noticeable than major spills, they can introduce potentially more oil into the marine and coastal environment and cause devastating long term impacts. The Kodiak Subarea is also plagued by the threat of more acute spill events, from tank ships, barges, or freight vessels transiting nearby waters.

The region averages approximately 61 spills per year, with an average of 2,834 gallons released per year. Excluding the single spill of 7,000 gallons in FY00, the average volume released per year was 1,834 gallons. Spills greater than 1,000 gallons in size are also infrequent for the subarea.

Largest Spill in the Subarea: The largest spill in this subarea (pre-spills database era) was the USCG Air Station incident in April 1992 with 46,200 gallons of diesel released.

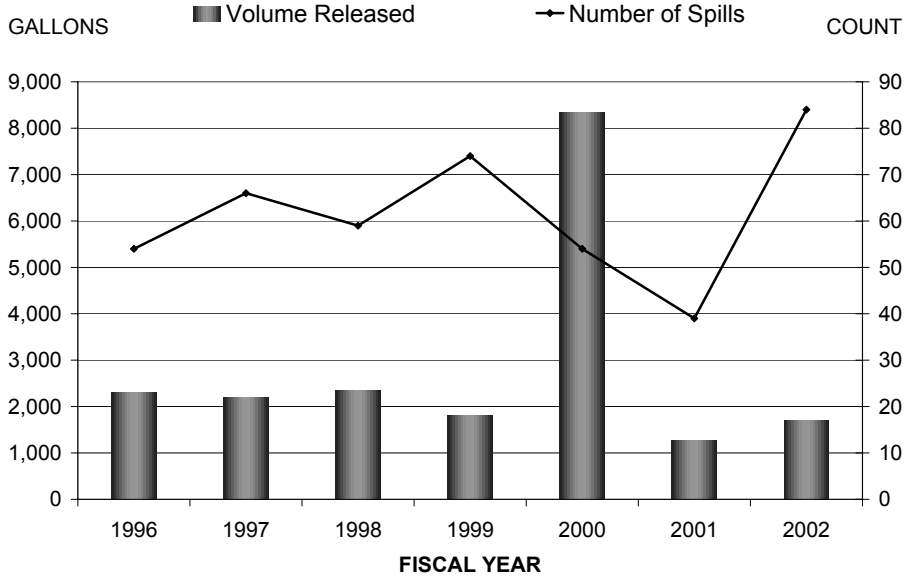
Discernible Trends:

- For Kodiak, the types of facilities responsible for spills was fairly evenly distributed with Storage at 27 percent, followed by Other facilities at 25 percent, and Transportation and Vessels each with 24 percent. Spills from Vessels, however, accounted for 65 percent of the total volume released.
- The causes of spills in the Kodiak subarea were led by Structural/Mechanical (41 percent), followed by Human Factors (36 percent), and Other causes (20 percent). In terms of total volume spilled, Human Factors accounted for 61 percent.
- Noncrude oil spills (94 percent) constituted the majority of the type of product spilled in the subarea, and also accounted for 99 percent of the total volume spilled in the subarea for this reporting period.

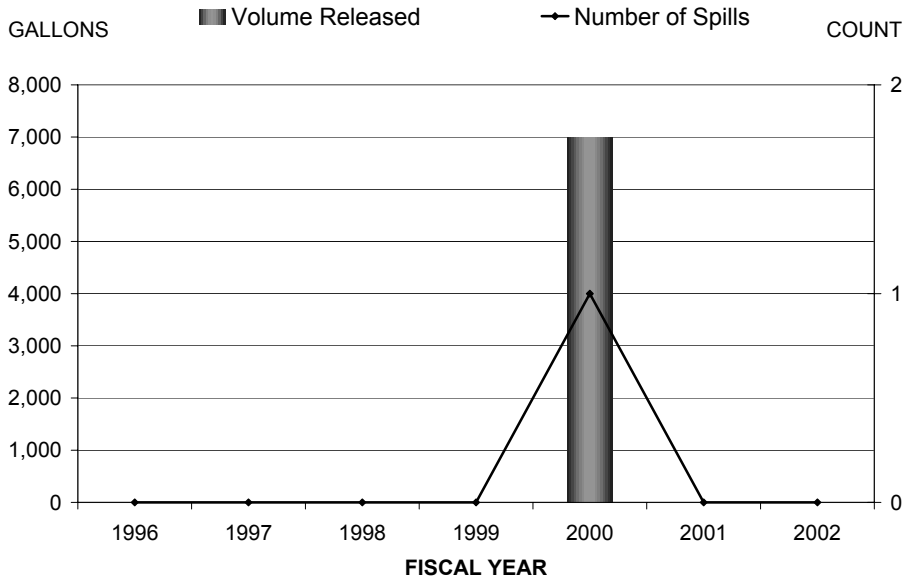
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	54	2,295	0	0
1997	66	2,206	0	0
1998	59	2,340	0	0
1999	74	1,798	0	0
2000	54	8,349	1	7,000
2001	39	1,258	0	0
2002	82	1,594	0	0
Total	428	19,840	1	7,000
Average	61	2,834	<1	1,000

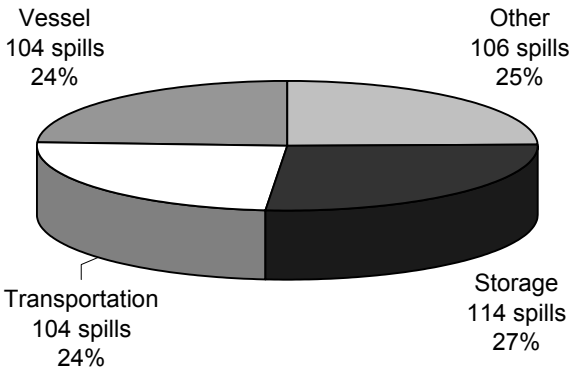
All Spills by Fiscal Year

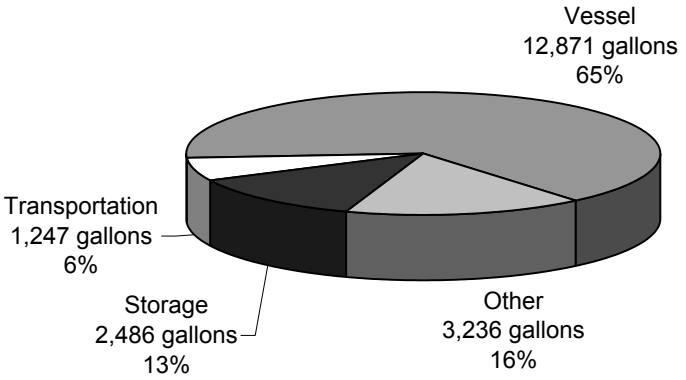


Spills >1,000 gallons

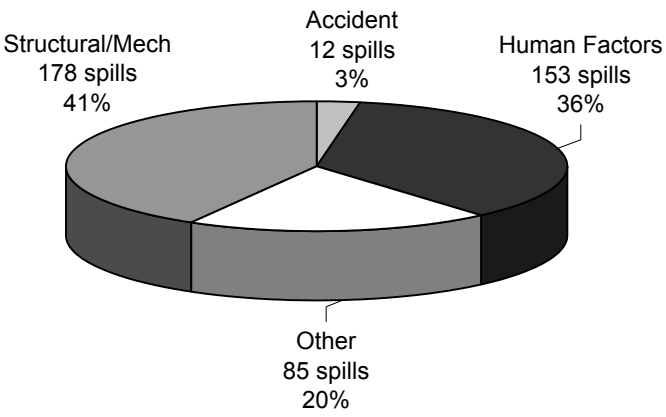


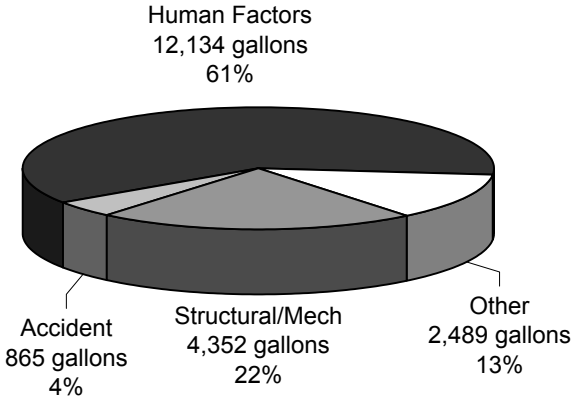
Kodiak Subarea Spills by Facility Type



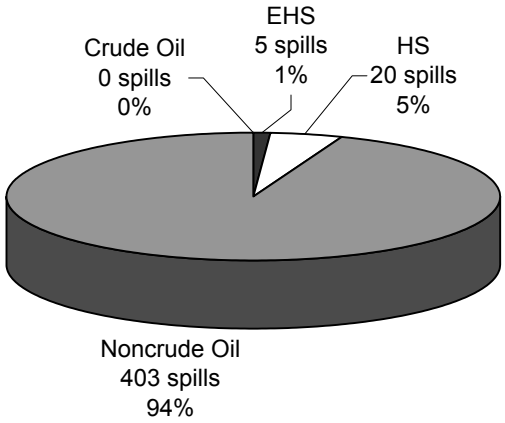


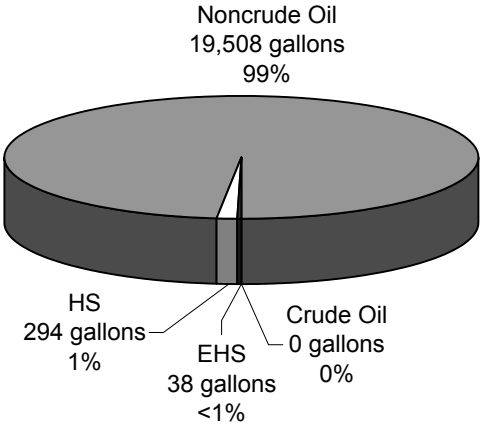
Kodiak Subarea Spills by Cause



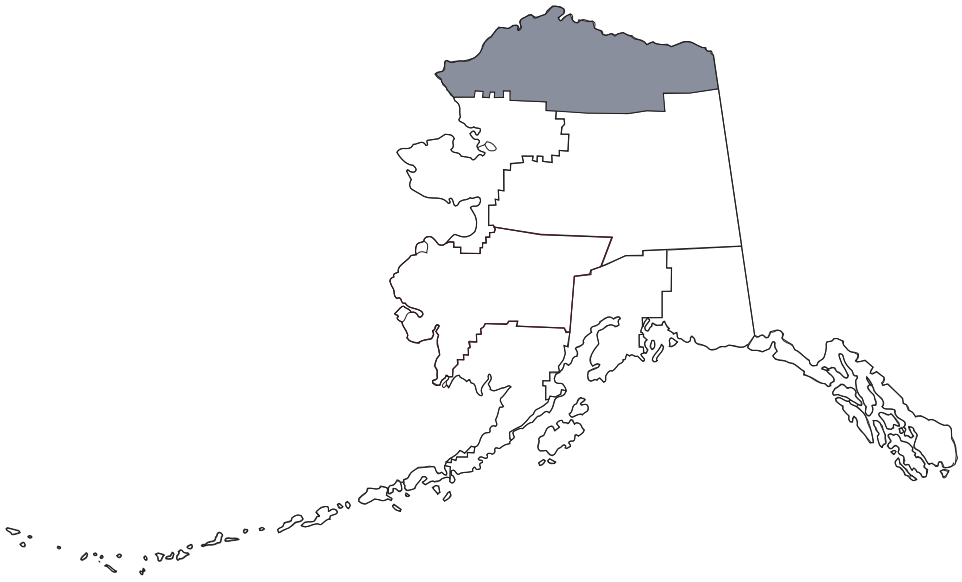


Kodiak Subarea Spills by Product





F. North Slope



There are a total of 10 villages in the region, 8 Native and 2 non-Native (Deadhorse and Cape Lisburne).

The number of facilities storing, handling, and transferring noncrude products is very small. These facilities typically provide fuel mainly for the generation of electricity and heating homes. The fuel is also used to power vehicles and vessels which are relatively few in number as well. Tank barges provide fuel to these facilities no more than twice each year and only during the short open-water season. Numerous exploratory and production wells exist in the region and produce a large amount of crude oil which is piped above ground to processing facilities before being shipped through the Trans Alaska Pipeline to Valdez.

The highest probability of spills of noncrude products occurs during fuel transfer operations at the remote villages. Historically, the occurrence of spills from facilities during these operations is not significant. Spills of noncrude product that enter the water will rapidly disperse and evaporate making cleanup difficult. Crude oil will be affected by the same natural degradation factors but to a much lesser degree. Crude oil spills will be persistent and will require aggressive actions and innovative techniques in the harsh Arctic environment.

The region averages 395 spills per year, with an average of 59,208 gallons released per year. An average of 8 spills greater than 1,000 gallons in size occur each year.

Largest Spill in the Subarea: The largest spill in this subarea was the Anaktuvuk Pass Power Plant incident on January 31, 1990 (pre-spills database era) with 100,000 gallons of diesel released.

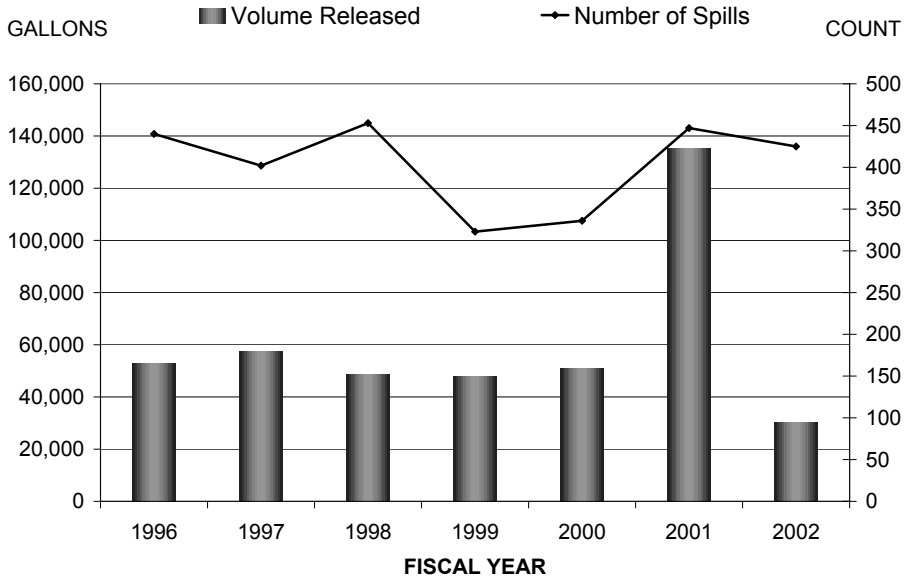
Discernible Trends:

- Transportation facilities were the source of the majority (83 percent) of the spills in the North Slope subarea, and also accounted for 75 percent of the total volume released during this reporting period.
- Structural/Mechanical causes were a primary factor in the majority of the spills (65 percent), and also accounted for 49 percent of the total volume released.
- Noncrude oil (54 percent) and hazardous substances (33 percent) were the notable substances spilled in the subarea. In terms of total volume, hazardous substances comprised 51 percent of the total volume spilled, while crude oil (27 percent) and noncrude oil (22 percent) accounted for most of the remaining volume released.

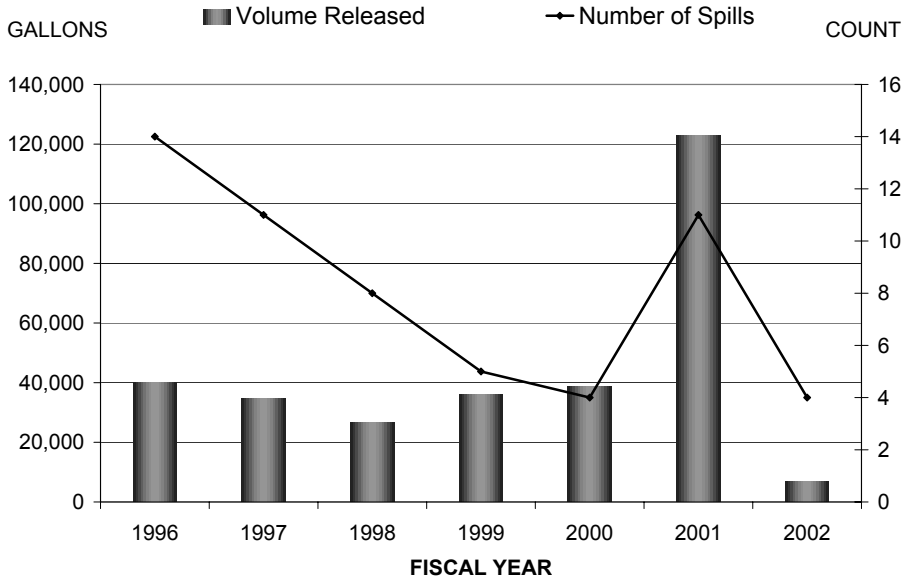
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	440	52,846	14	39,976
1997	401	55,968	11	34,709
1998	452	48,428	8	26,745
1999	323	47,946	5	36,138
2000	332	50,771	4	38,700
2001	442	135,303	11	122,856
2002	374	23,196	4	6,974
Total	2,764	414,458	57	306,098
Average	395	59,208	8	43,728

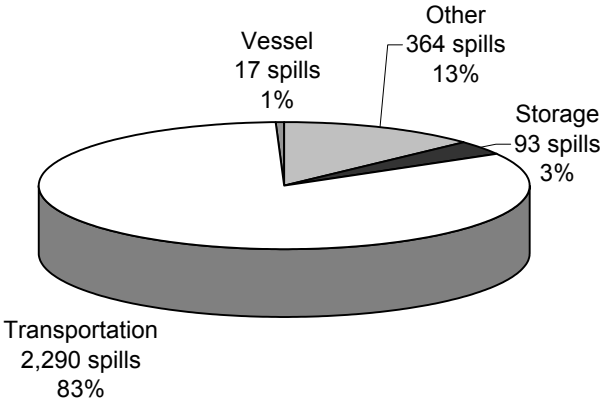
All Spills by Fiscal Year

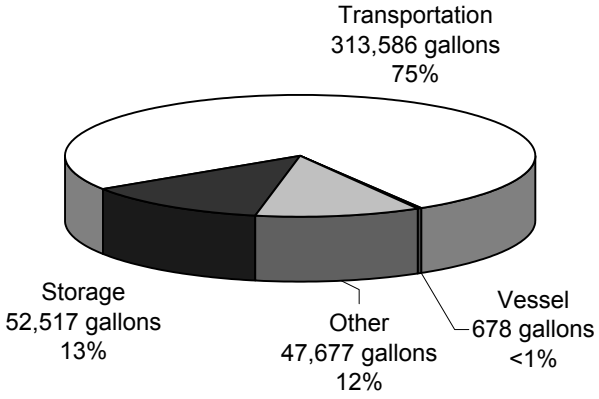


Spills >1,000 gallons

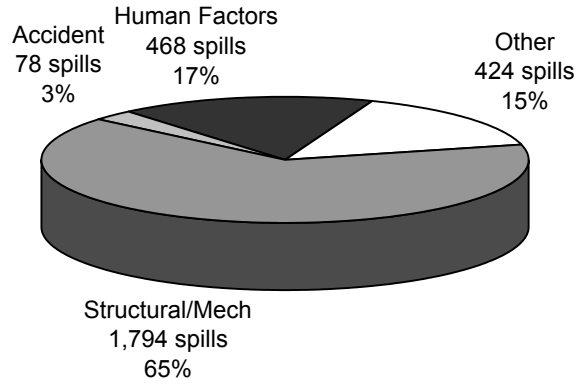


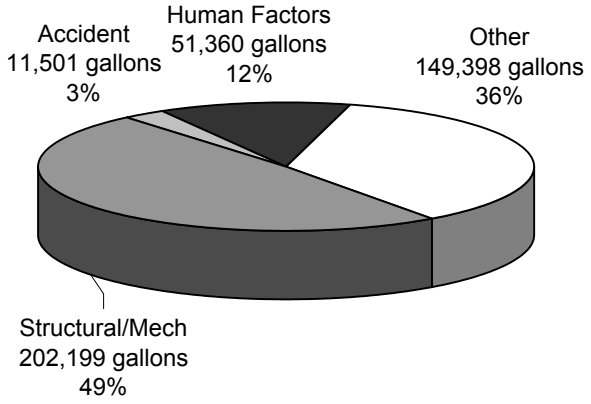
North Slope Subarea Spills by Facility Type



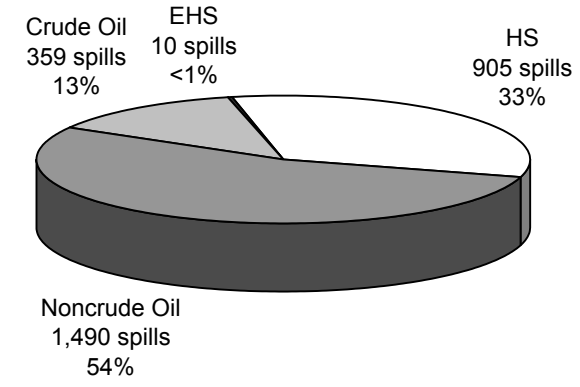


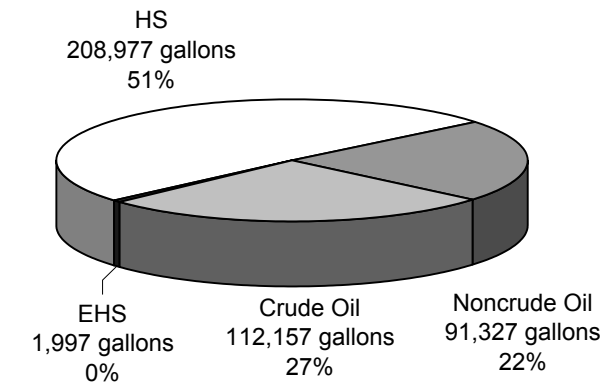
North Slope Subarea Spills by Cause



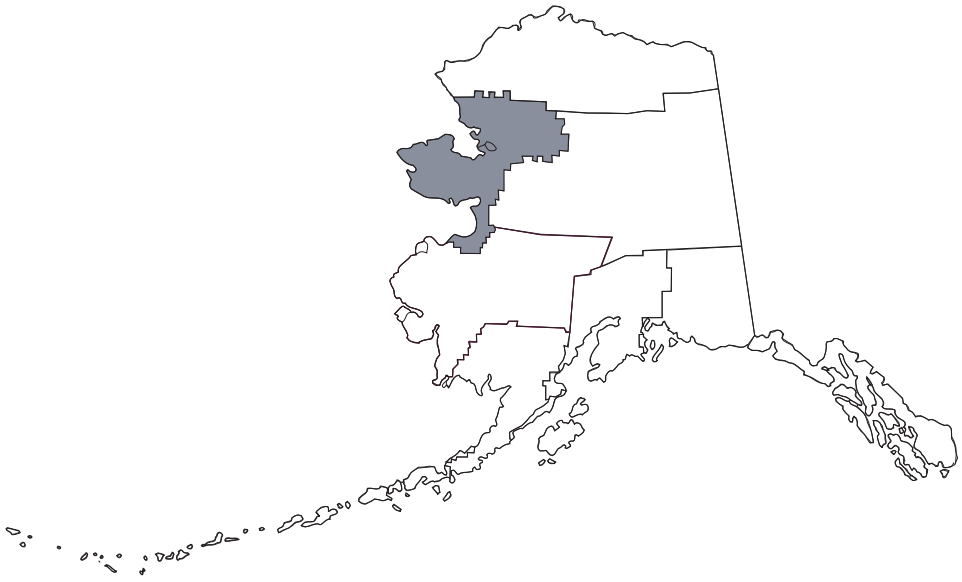


North Slope Subarea Spills by Product





G. Northwest Arctic



There are a total of 31 towns and villages in the subarea. Deliveries of noncrude oils are made to these locales primarily by barges operating from Dutch Harbor or Cook Inlet. Deliveries are ice dependent, and do not occur as ice forms.

The number of facilities storing, handling and transferring noncrude products is very small. These facilities typically provide fuel for the generation of electricity and for heating homes. The fuel is also used to power vehicles and vessels, which are relatively few in number as well. Tank barges provide fuel to these facilities no more than twice each year and only during the short open-water season.

The region averages 135 spills per year, with an average of 118,900 gallons released per year. An average of 5 spills greater than 1,000 gallons in size occur each year.

Largest Spill in the Subarea: The largest petroleum product spill in this subarea was a gasoline spill at an aviation tank farm in Unalakleet on March 24, 2000. A total of 84,360 gallons of gasoline was released. The largest hazardous substance spill occurred in May 1998 when 200,000 gallons of magnesium oxide was released at a mining facility.

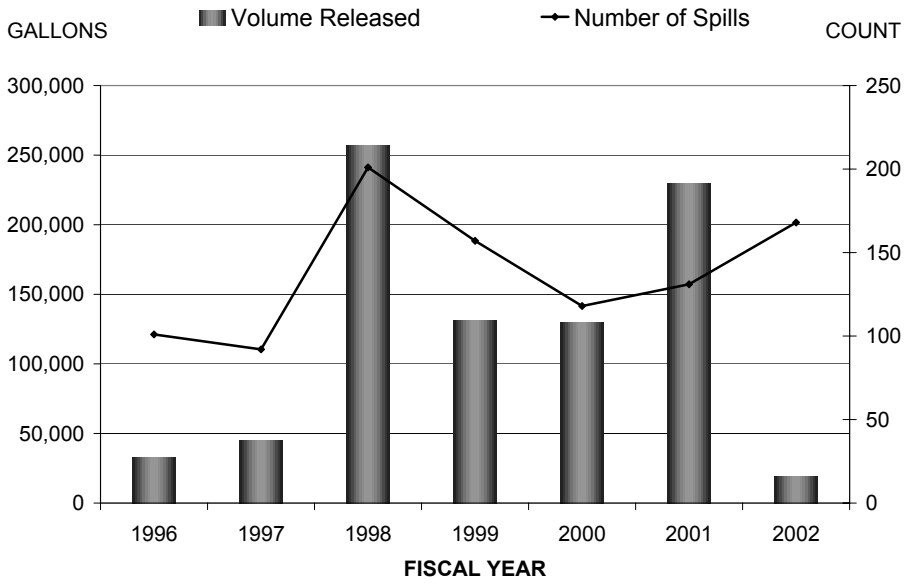
Discernible Trends:

- Storage (45 percent) and Transportation (43 percent) facilities were the primary sources for the majority of the spills in the Northwest Arctic. Storage facilities accounted for 67 percent of the total volume released during this reporting period.
- Structural/Mechanical causes were a primary factor in the majority of the spills (67 percent), while "Other" causes accounted for 52 percent of the total volume released.
- Noncrude oil (72 percent) was the primary product spilled in the majority of the spills. In terms of total volume, hazardous substances comprised 76 percent of the total volume spilled, followed by noncrude oil (24 percent).

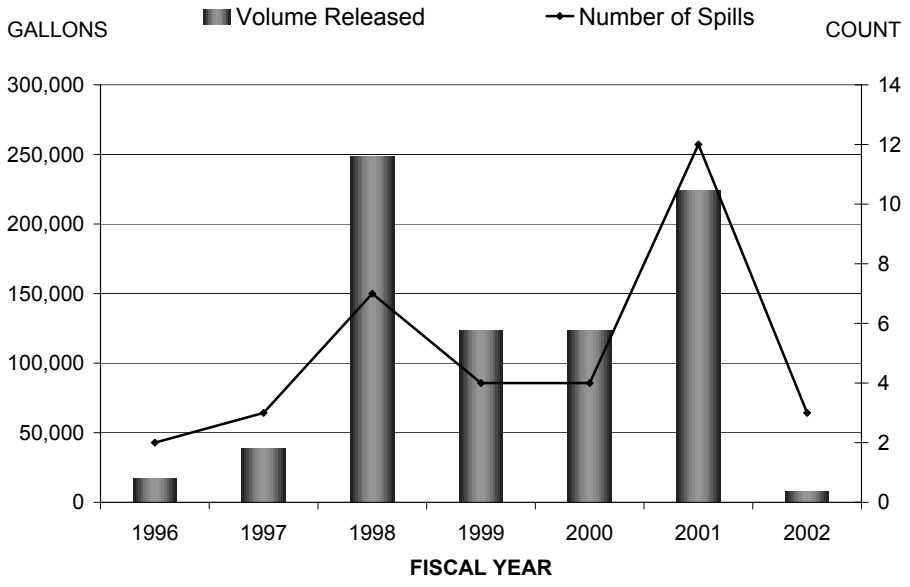
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	100	25,664	2	17,000
1997	91	45,137	3	39,000
1998	201	256,823	7	248,500
1999	157	131,496	4	123,118
2000	116	129,218	4	123,360
2001	130	229,812	12	223,829
2002	148	14,152	3	7,800
Total	943	832,302	35	782,607
Average	135	118,900	5	111,801

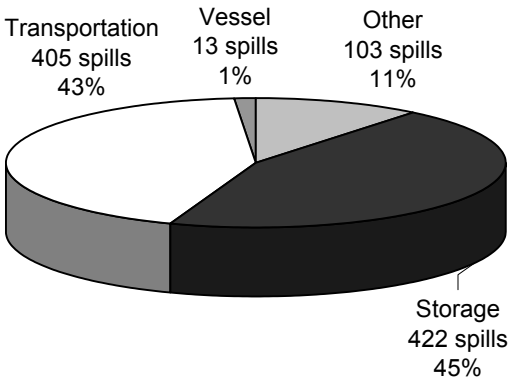
All Spills by Fiscal Year

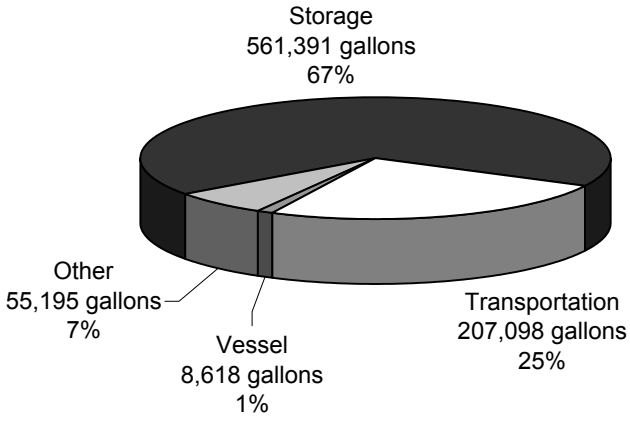


Spills >1,000 gallons

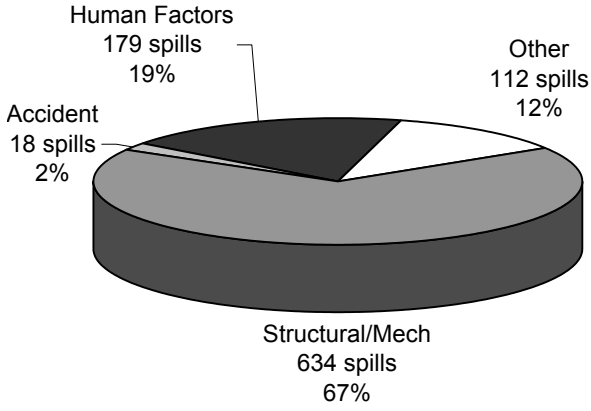


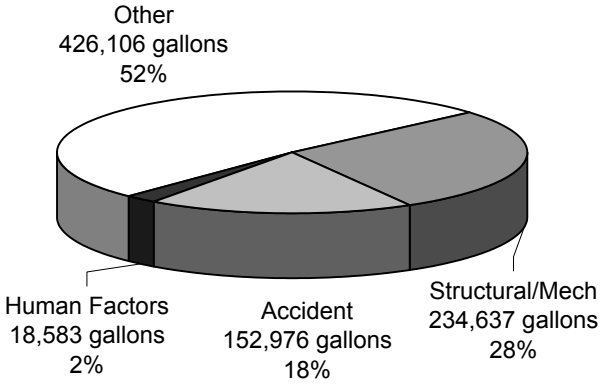
Northwest Arctic Subarea Spills by Facility Type



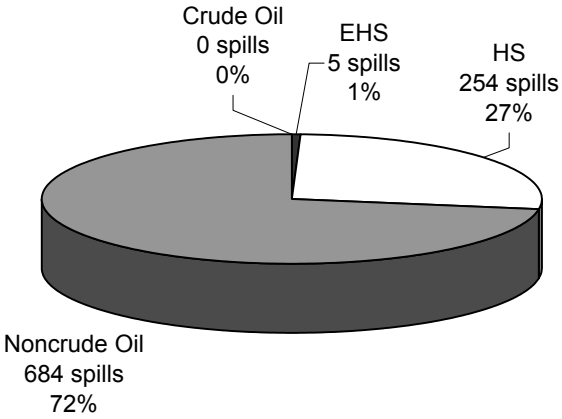


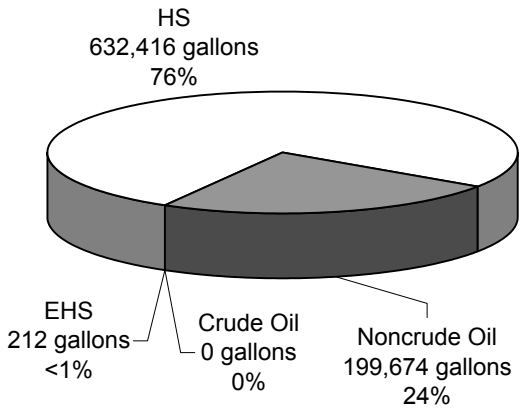
Northwest Arctic Subarea Spills by Cause



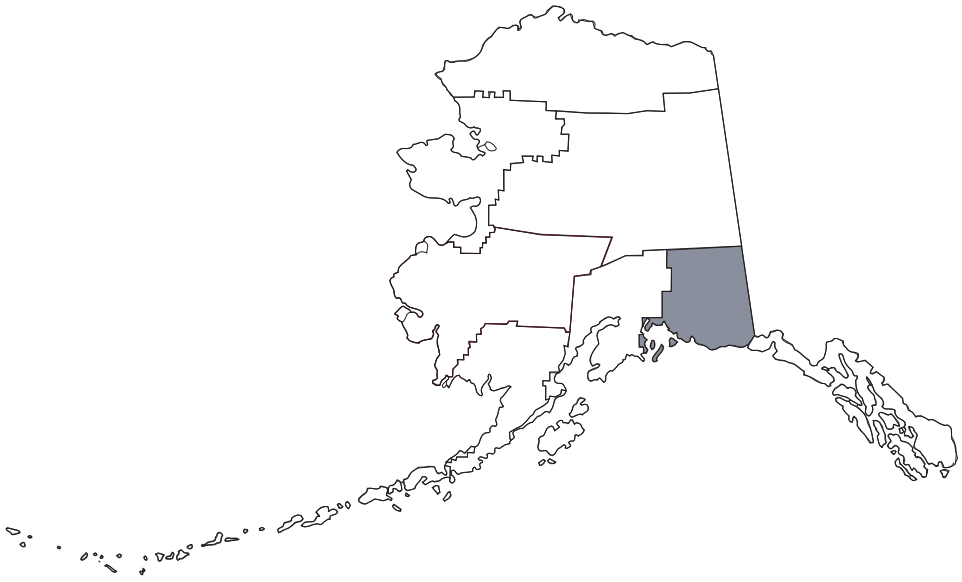


Northwest Arctic Subarea Spills by Product





H. Prince William Sound



The region averages 95 spills per year, with an average of 20,720 gallons released per year. An average of 2 spills greater than 1,000 gallons in size occur each year.

Largest Spill in the Subarea: The largest spill in this subarea (pre-spills database era) was the T/V ExxonValdez oil spill on March 24, 1989 with 10,800,000 gallons of North Slope crude oil released.

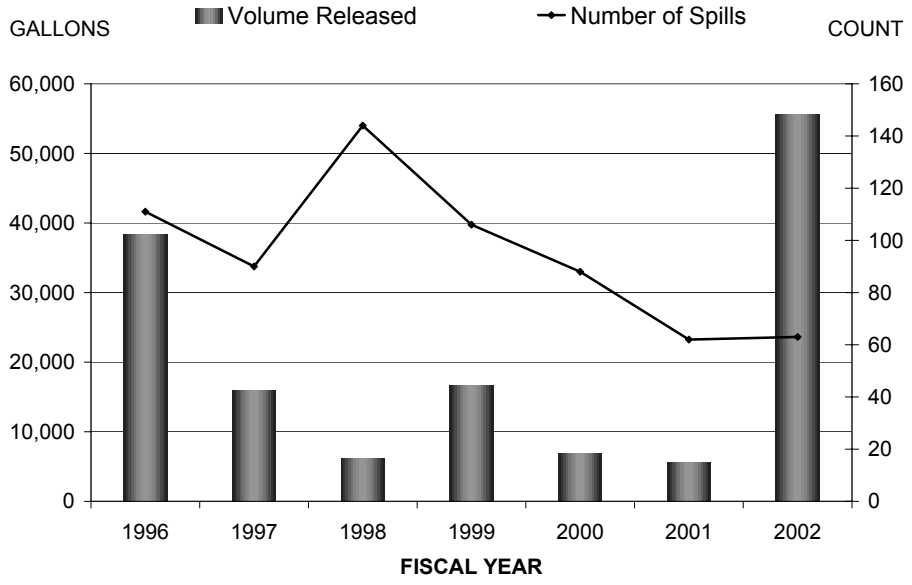
Discernible Trends:

- Since 1998, the number of spills in the Prince William Sound subarea has been declining with an average of approximately 62 spills during 2001 and 2002.
- Transportation, Storage, and Vessels were the primary types of facilities contributing to the majority of the spills in the subarea with each facility type accounting for 28 percent of the spills. In terms of total volume released, the same statistics were nearly true for the total volume released (Transportation - 31 percent; Storage – 30 percent; and Vessels – 29 percent).
- Structural/Mechanical causes were a primary factor in the majority of the spills (54 percent). Structural/Mechanical causes also accounted for 49 percent of the total volume released, followed by Human Factors (44 percent).
- Noncrude oil (76 percent) was the primary product spilled in the majority of the spills in the subarea. In terms of total volume, noncrude oil comprised 66 percent of the total volume spilled, followed by crude oil (27 percent).

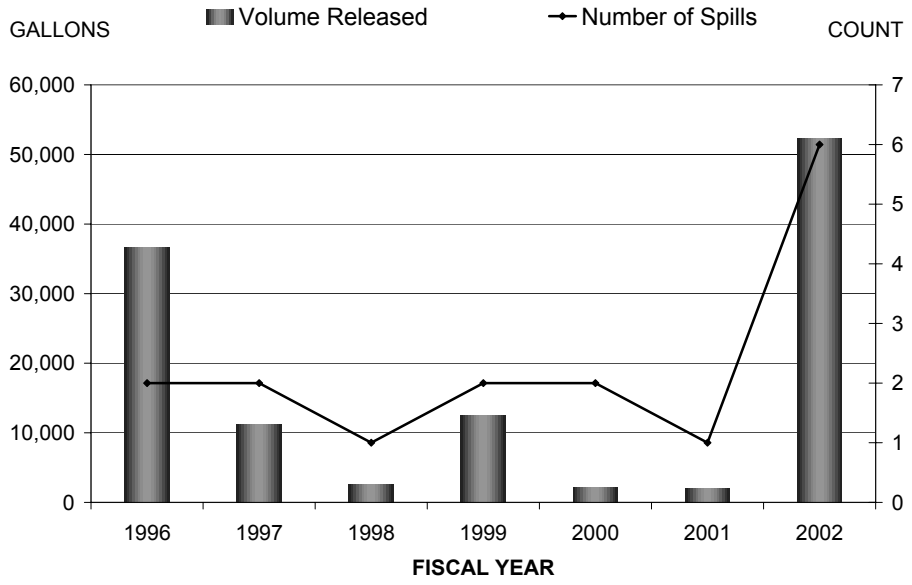
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	111	38,400	2	36,653
1997	90	15,891	2	11,200
1998	144	6,153	1	2,604
1999	106	16,638	2	12,445
2000	87	6,834	2	2,200
2001	62	5,531	1	2,000
2002	62	55,590	6	52,275
Total	662	145,037	16	119,377
Average	95	20,720	2	17,054

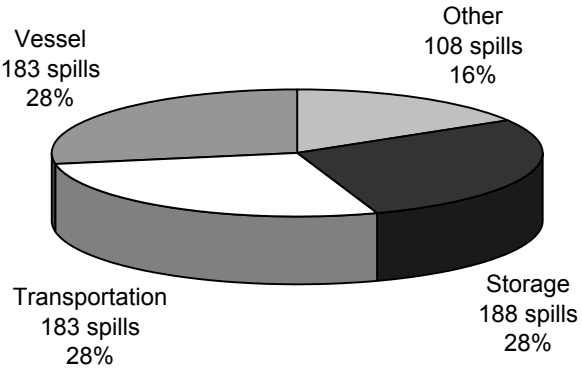
All Spills by Fiscal Year

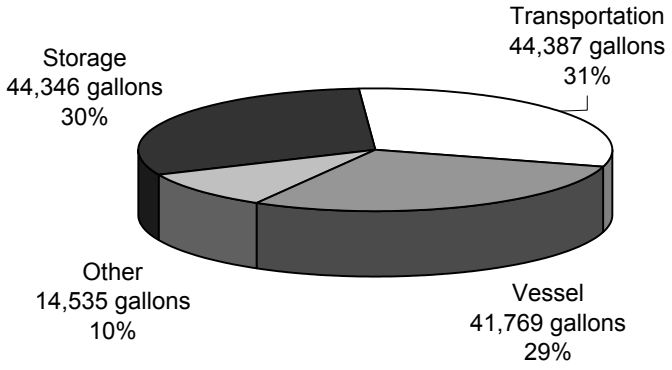


Spills >1,000 gallons

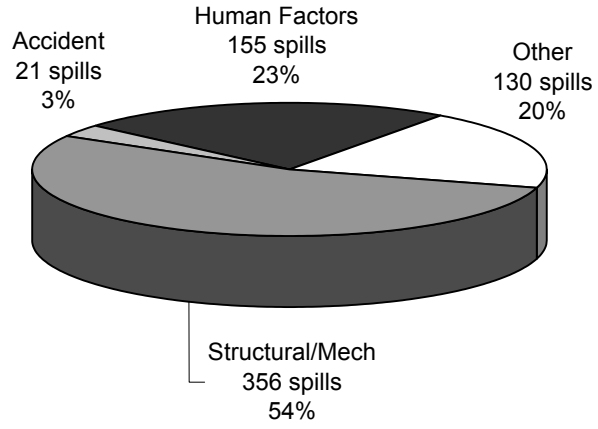


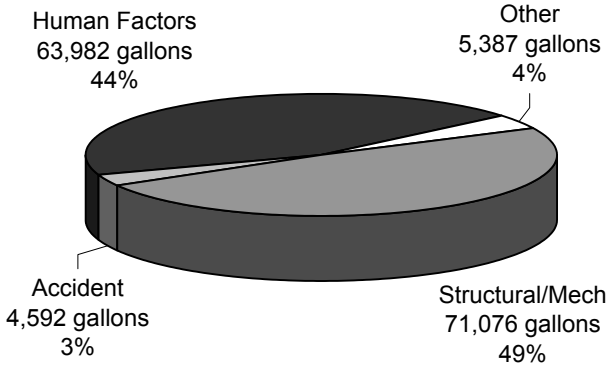
Prince William Sound Subarea Spills by Facility Type



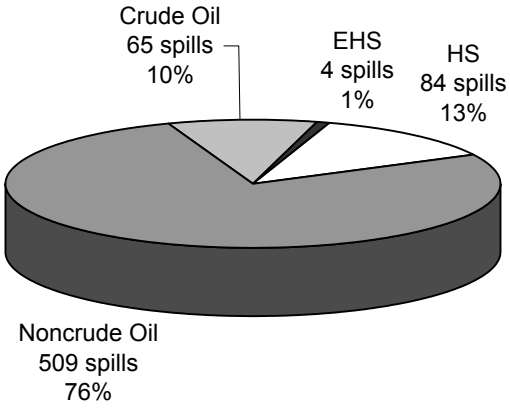


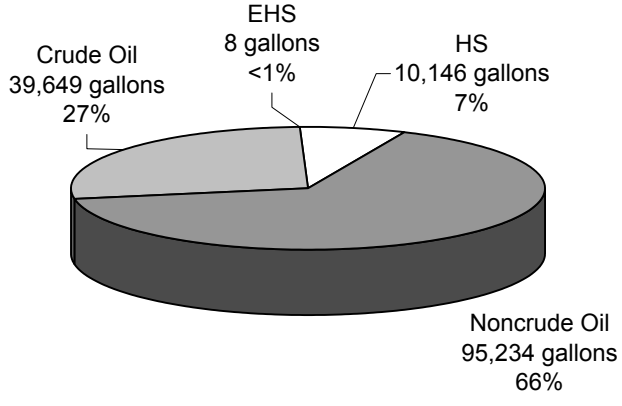
Prince William Sound Subarea Spills by Cause



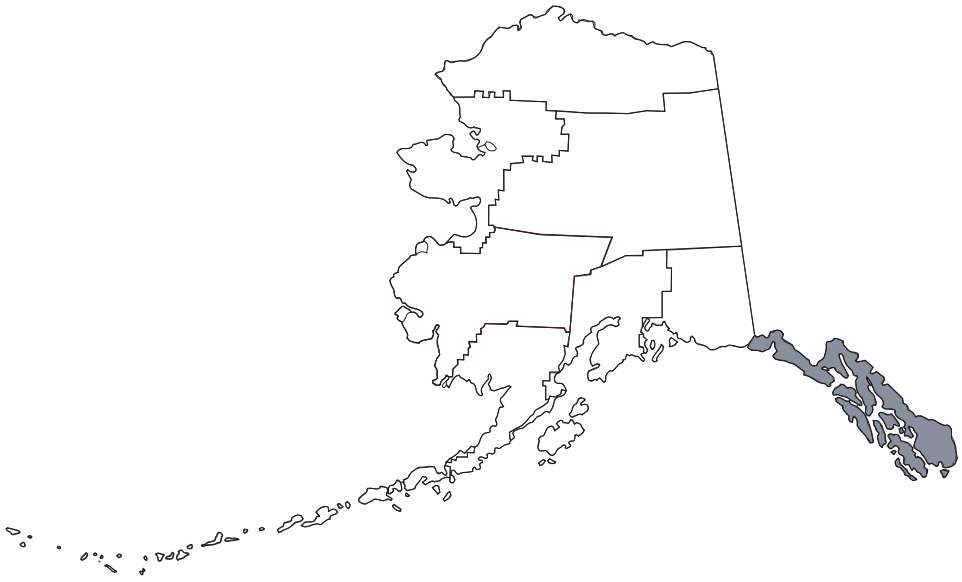


Prince William Sound Subarea Spills by Product





I. Southeast Alaska



The region averages 377 spills per year, with an average volume of 21,921 gallons released per year. An average of 2 spills greater than 1,000 gallons in size occur each year.

Largest Spill in the Subarea: The largest spill in this subarea (pre-spills database era) was the M/V LeeWang Zin oil spill on December 25, 1979. The vessel capsized in the Dixon Entrance and 200,000 gallons of #6 bunker fuel was released.

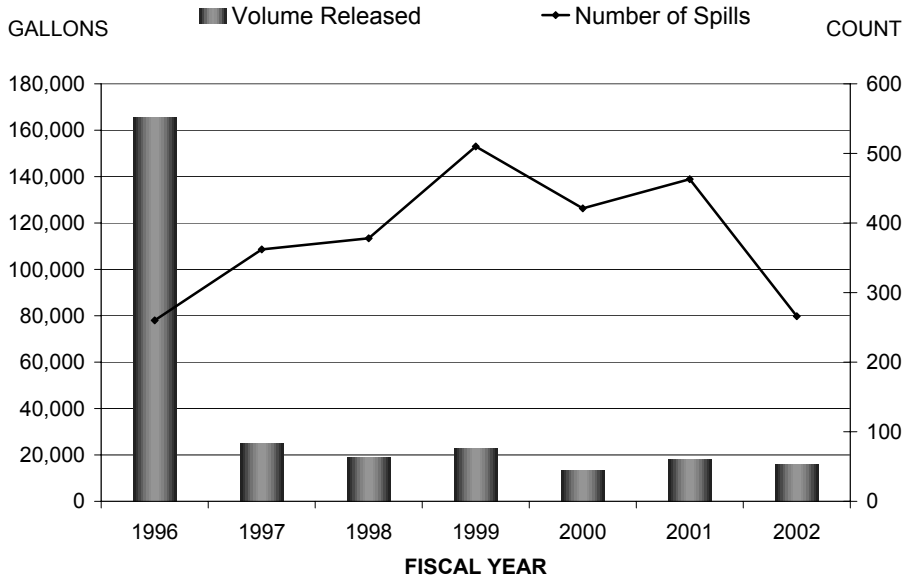
Discernible Trends:

- Other facilities (38 percent), Vessels (25 percent), Storage (20 percent), and Transportation (17 percent) constituted the primary facility types for spills in the subarea. In terms of total volume released, Storage facilities (38 percent) were by far the major contributors to the total volume released.
- For primary causes of spills in the subarea, Other causes (38 percent), followed by Structural/Mechanical causes (31 percent), and Human Factors (27 percent) were responsible for most of the spills. However, Structural/Mechanical and Human Factors causes resulted in 71 percent of the total volume released.
- Noncrude oil (90 percent) was the primary product spilled in the majority of the spills. In terms of total volume, noncrude oil comprised 90 percent of the total volume spilled.

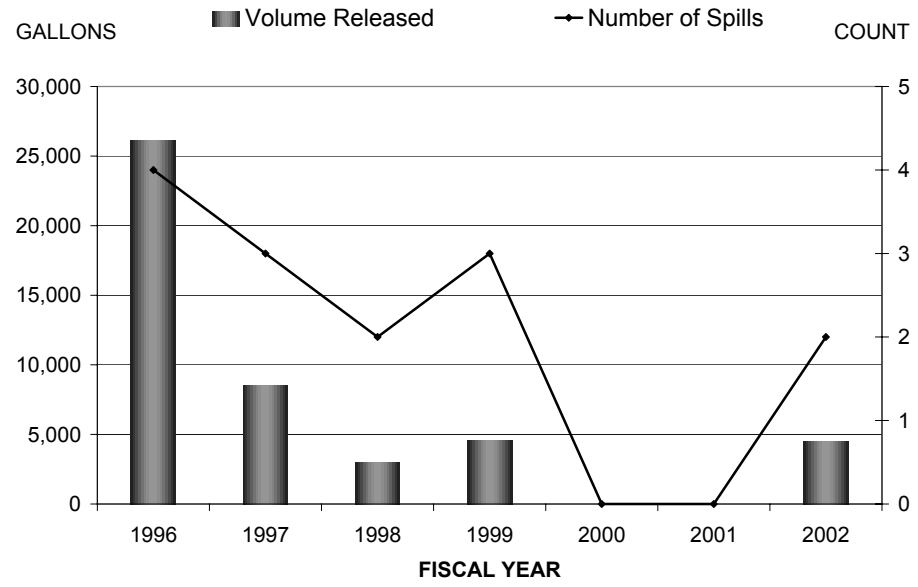
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	259	40,294	4	26,110
1997	362	25,117	3	8,500
1998	378	18,896	2	3,000
1999	510	22,616	3	4,600
2000	421	13,158	0	0
2001	463	17,833	0	0
2002	249	15,534	2	4,500
Total	2,642	153,448	14	46,710
Average	377	21,921	2	6,673

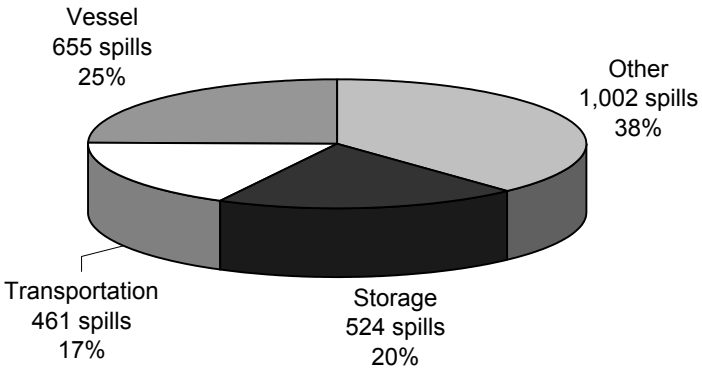
All Spills by Fiscal Year

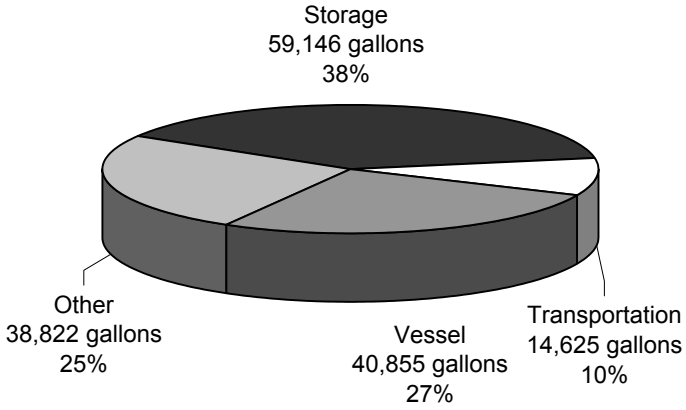


Spills >1,000 gallons

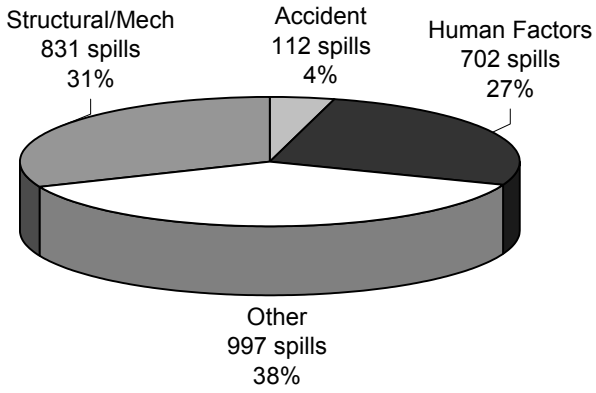


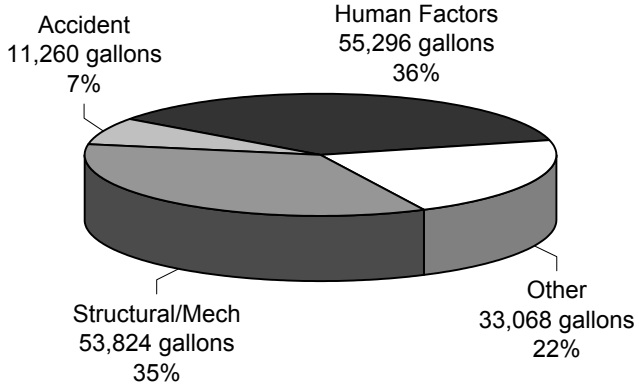
Southeast Alaska Subarea Spills by Facility Type



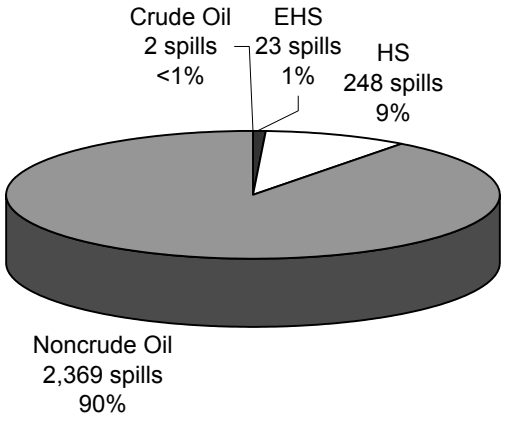


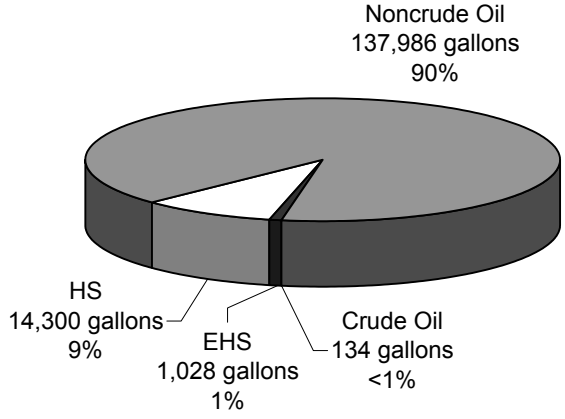
Southeast Alaska Subarea Spills by Cause



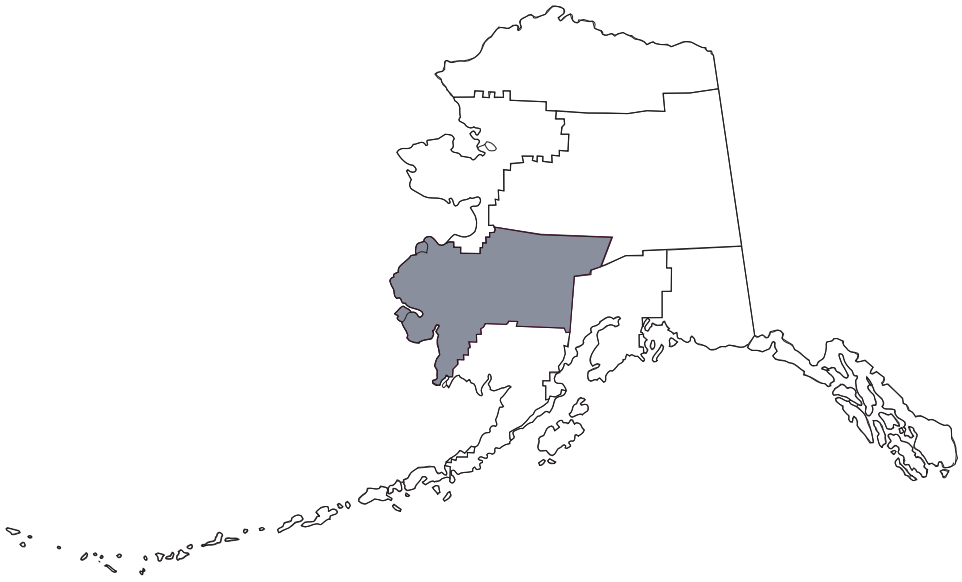


Southeast Alaska Subarea Spills by Product





J. Western Alaska



The region averages 79 spills per year, with an average volume of 10,176 gallons released per year. An average of 2 spills greater than 1,000 gallons in size occur each year.

Largest Spill in the Subarea: The largest spill in this subarea (pre-spills database era) was the BIA Tank Farm spill in Bethel on April 16, 1993 with 132,000 gallons of diesel released.

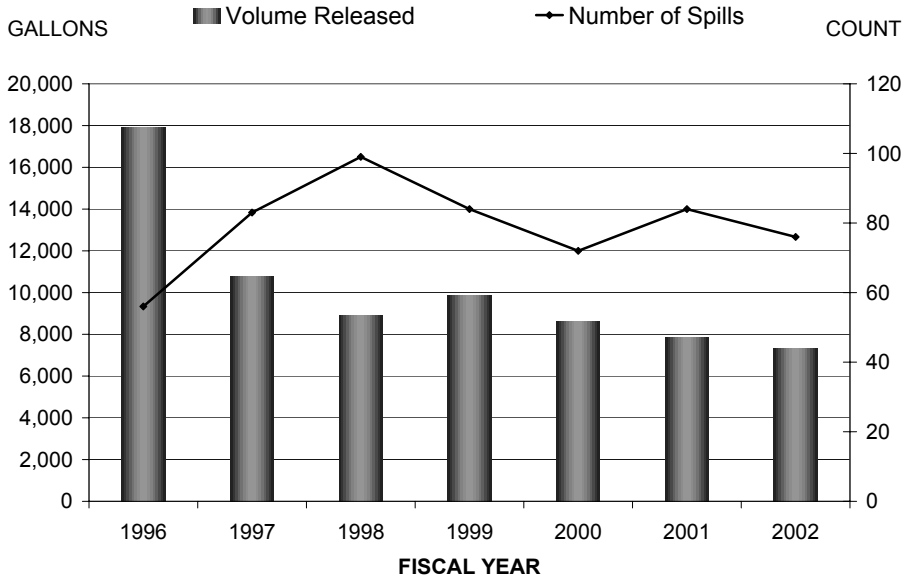
Discernible Trends:

- Storage (49 percent) constituted the primary facility type for the majority of the spills in the subarea, and also accounted for 76 percent of the total volume released.
- Human Factors (42 percent) and Structural/Mechanical causes (40 percent) were primary factors in the majority of the spills. Human Factors causes also led the way with 55 percent of the total volume released.
- Noncrude oil (99 percent) was the overwhelming product spilled in the subarea. In terms of total volume, nearly 100 percent of the total volume released was noncrude oil.

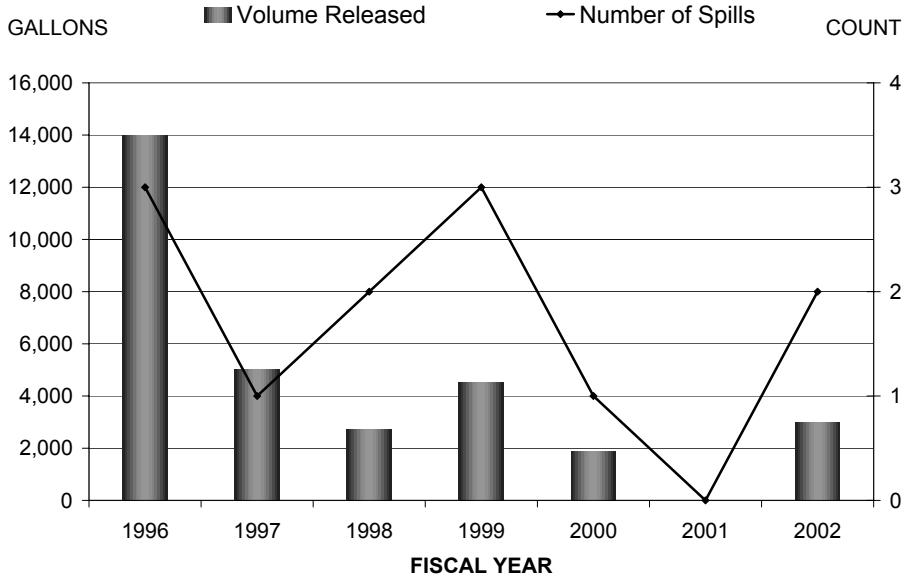
Spills Summary

Fiscal Year	All Spills		Spills >1,000 gallons	
	Number	*Total Gallons*	*Number*	*Total Gallons*
1996	56	17,919	3	14,000
1997	83	10,780	1	5,000
1998	99	8,891	2	2,700
1999	84	9,860	3	4,500
2000	72	8,604	1	1,886
2001	84	7,873	0	0
2002	74	7,306	2	3,000
Total	552	71,233	12	31,086
Average	79	10,176	2	4,441

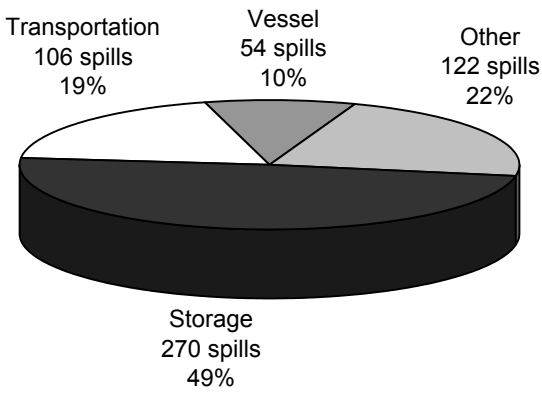
All Spills by Fiscal Year

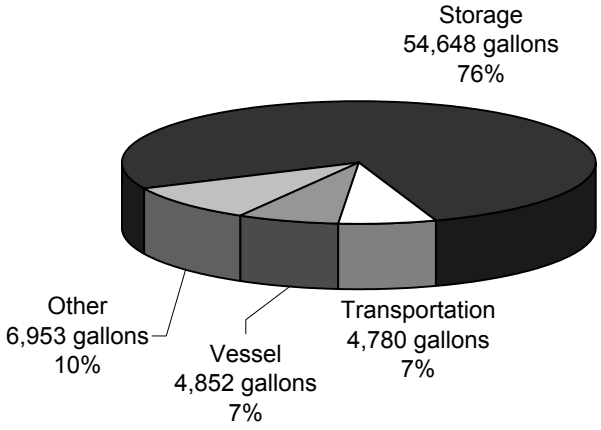


Spills >1,000 gallons

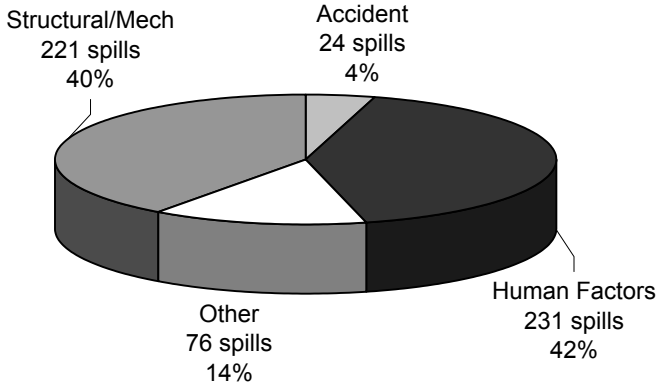


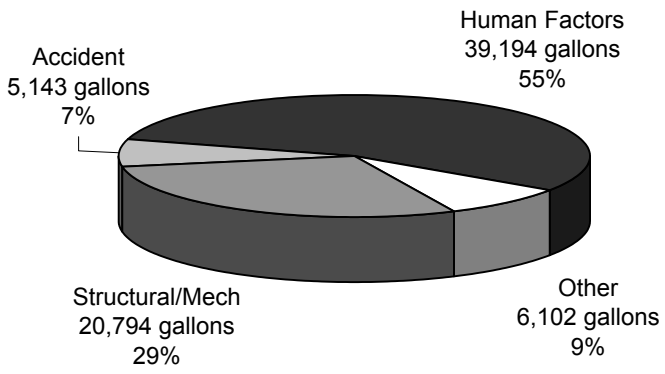
Western Alaska Subarea Spills by Facility Type



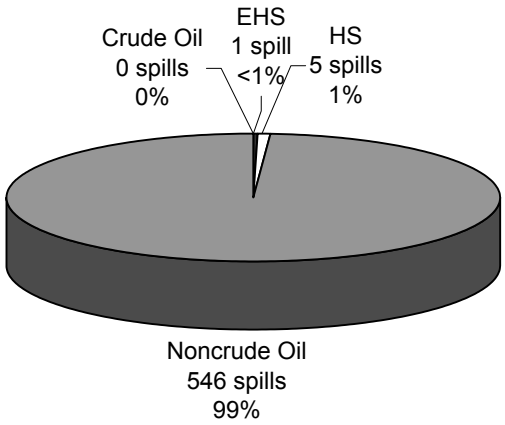


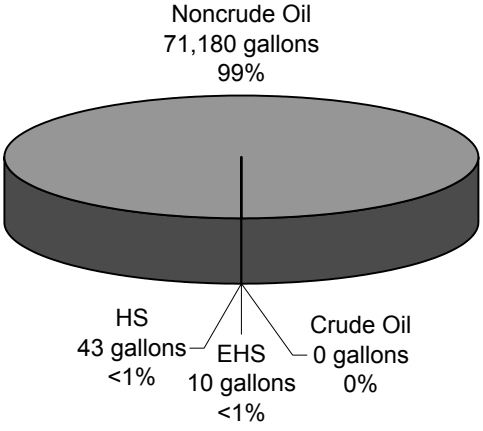
Western Alaska Subarea Spills by Cause





Western Alaska Subarea Spills by Product





Appendices

Appendix A: Acronyms and Glossary

Acronyms

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AFB	Air Force Base
AL	Aleutian subarea
API	American Petroleum Institute
APL	Alyeska Pipeline
ARRC	Alaska Railroad Corporation
AS	Alaska Statute
AVEC	Alaska Village Electric Cooperative
BB	Bristol Bay subarea
bbl	Barrel of oil
BIA	Bureau of Indian Affairs
BWT	Ballast Water Treatment
CART	Central Alaska Response Team
CEPPO	Chemical Emergency Preparedness and Prevention Office
CFR	Code of Federal Regulations
CI	Cook Inlet subarea
CPF	Central Production Facility
CSites	Contaminated Sites Program (ADEC)
DFSC	Defense Fuels Supply Center
DOT	Department of Transportation (and Public Facilities)
DS	Drill Site
DWT	Dead Weight Ton
EHS	Extremely Hazardous Substance
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
F/V	Fishing Vessel
FWS	US Fish and Wildlife Service
FY	Fiscal Year (State of Alaska fiscal year is July 1 to June 30)
gals	Gallons
GC	Gathering Center
GT	gross ton
HAGO	Heavy Atmospheric Gaseous Oil
HHOT	Home Heating Oil Tank
HS	Hazardous Substance
HVAC	Heating, Ventilation, and Air Conditioning
IN	Interior Alaska subarea
IPP	Industry Preparedness Program
KO	Kodiak Island subarea
KPL	Kenai Pipeline
lbs	Pounds
LEPD	Local Emergency Planning District
LPG	liquid propane gas

LTF	Log Transfer Facility
LYSD	Lower Yukon School District
M/V	Motor Vessel
MINE	Mining Operations/Facilities
MP	Milepost
MSDS	Material Safety Data Sheet
NART	Northern Alaska Response Team
NH3	anhydrous ammonia
NRC	National Research Council (also National Response Center)
NS	North Slope subarea
NW Arctic	Northwest Arctic
NW	Northwest Arctic subarea
OE&P	Oil Exploration and Production
OILEX	Oil Exploration Facility
OILPD	Oil Production Facility
OILTERM	Oil Terminal Facility
PCB	polychlorinated biphenyl
PDF	portable document file
PERP	Prevention and Emergency Response Program (ADEC)
PIPE	Transmission Pipeline
PLMP	Pipeline Milepost
PWS	Prince William Sound
PWS	Prince William Sound subarea
QA/QC	Quality Assurance/Quality Control
REAA	Regional Educational Attendance Area
REF	Refinery Operation
RR	railroad
SARA	Superfund Amendments and Reauthorization Act
SART	Southeast Alaska Response Team
SE	Southeast Alaska subarea
SERC	State Emergency Response Commission
SITREP	Situation Report (DEC generated)
SPAR	Spill Prevention and Response Division (ADEC)
SQL	sequel server
Struct/Mech	Structural/Mechanical
T/B	tanker barge
T/V	Tanker Vessel
TANK	Tanker Vessel
TAPS	TransAlaska Pipeline System
TCSA	Tuntutuliak Community Service Association
TERM	Oil Terminal Facility
UAF	University of Alaska Fairbanks
USC	United States Code
USCG	United States Coast Guard
VMT	Valdez Marine Terminal
WE	Western Alaska subarea

Glossary

The following tables provide a quick reference to the general classification scheme used in the ADEC SPILL database for Causes, Facilities, and Substances.

Cause Classification

Cause Type	Cause
Accident	Collision/Allision
	Derailment
	Grounding
	Rollover/Capsize
	Well Blow-Out
Human Factors	Bilge Discharge
	Cargo Not Secured
	Human Error
	Intentional Release
	Overfill
	Sabotage/Vandalism
	Sinking
Other	Explosion
	External Factors
	Other
Structural/Mechanical	Containment Overflow
	Corrosion
	Crack
	Equipment Failure
	Erosion
	Gauge/Site Glass Failure
	Hull Failure
	Leak
	Line Failure
	Puncture
	Seal Failure
	Support Structure Failure
	Tank Failure
	Tank Support Structure Failure
	Valve Failure
	Vehicle Leak, All
Unknown	Unknown

Facility Classification

Category	Type	SubType	Definition
Transportation	Air Transportation	Aircraft	Includes air taxi, air charter, airline, and private aircraft
	Air Transportation	Airport/Airfield	Includes all airport/aircraft support services, hangars, airline maintenance facilities and offices
	Harbor/Port Facility		Commercial marinas, harbors, ports
	Oil Exploration	Offshore	Offshore oil exploration activities, including rillships, platforms, and ice islands
	Oil Exploration	Onshore	Onshore oil exploration activities
	Oil Production	Offshore	Offshore oil production platforms, including platforms and gravel islands
	Oil Production	Onshore	Onshore production wells, fields and pads
	Oil Production	Flow Lines	Includes all pre-gathering-center lines, regardless of contents
	Oil Production	Field Processing	Includes flow stations, gathering centers, gas conditioning facilities, and other field processing facilities
	Railroad Operation		Self-explanatory
	Transmission Pipeline		Crude and noncrude (refined) oil and gas pipelines and associated pump stations
	Vehicle		All land-based vehicles except railroads, unless considered part of a larger facility
Vessel	Vessel 400 GT and over	Other	Vessel operation 400 GT and over not otherwise listed; includes pleasure craft
	Vessel 400 GT and over	Barge	All barges including IPP regulated oil barges
	Vessel 400 GT and over	Cargo	All self-propelled cargo vessels 400 GT and over (i.e., excludes cargo barges)
	Vessel 400 GT and over	Fishing	Commercial fishing vessels, floating fish processors 400 GT and over
	Vessel 400 GT and over	Passenger	Vessels 400 GT and over carrying paying passengers, including ferries and cruise ships
	Vessel 400 GT and over	Tanker	Oil tank vessels
	Vessel under 400 GT	Other	Vessel operation under 400 GT not otherwise listed; includes pleasure craft
	Vessel under 400 GT	Cargo	All self-propelled cargo vessels under 400 GT (i.e., excludes cargo barges)
	Vessel under 400 GT	Fishing	Commercial fishing vessels, floating fish processors under 400 GT
	Vessel under 400 GT	Passenger	Vessels under 400 GT carrying paying passengers, including ferries and cruise ships
Storage	Cannery		Land-based fish processing operations
	Farm/Aquaculture		All farms, hatcheries, mariculture facilities, and related activities

Facility Classification *(continued)*

Category	Type	SubType	Definition
Storage	Gas Station		All retail service stations which dispense gasoline and other fuels
	Laundry Service		Includes dry cleaners, laundromats, washeterias
	Log Processing		Includes veneer plants, sawmills, pulp mills and chipping operations
	Logging Operation		Includes log transfer facilities (LTFs), sort yards, logging camps
	Maintenance Yard/Shop		Self-explanatory
	Mining Operation		Self-explanatory
	Crude Oil Terminal		Crude oil terminals and tank farms of any size (includes both regulated and unregulated facilities)
	Non-Crude Oil Terminal		Non-crude oil terminals and tank farms of any size (includes both regulated and unregulated facilities)
	Power Generation		Power utilities and generators
	Refinery Operation		Refined (noncrude) oil processing
	Residence		Private residence
	School		Self-explanatory
	Telecommunications		Includes repeater stations, other communications-related sites
	Water/Wastewater Facility		Self-explanatory
Other	Drug Lab		Illicit methamphetamine laboratories
	Firing Range		Self-explanatory
	Landfill/Dump		Includes permitted landfills, legal and unauthorized dumps
	Other		Non-vessel operation not otherwise listed
	Salvage/Wrecking Yard		Self-explanatory
	Unknown		Self-explanatory

Substance Classification

Crude Oil
- Crude

Extremely Hazardous Substance *(Common to Alaska)*
- Acrolein (Inhibited)
- Acrylamide
- Aldrin
- Ammonia (Anhydrous)
- Chlordane
- Chlorine
- Endrin
- Formaldehyde
- Furans
- Hydrazine (Anhydrous)
- Hydrochloric Acid
- Hydrofluoric Acid
- Hydrogen Cyanide
- Hydrogen Peroxide
- Hydrogen Sulfide
- Hydroquinone (Solid)
- Nitric Acid (>40% Solution)
- Phenol
- Phosphoric Acid, Dimethyl 4-(Methylthio)
- Phosphorus (Solid)
- Phosphorus (Solution)
- Sodium Azide (Solid)
- Sodium Cyanide (Solid)
- Sodium Cyanide (Solution)
- Sulfur (Dioxide)
- Sulfuric Acid
- Toluene 2,4-Diisocyanate
- Toxaphene

Hazardous Substance
- Acid, Other
- Arsenic
- Bases
- Biocide
- Calcium Chloride (Solid)
- Calcium Hypochlorite (Solid)
- Caustic Alkali Liquids (Caustic Soda)
- Compressed Gases
- Corrosion Inhibitor
- DDT
- Dieldrin
- Dioxins
- Drag Reducing Agent
- Drilling Muds
- Emulsion Breaker
- Ethyl Alcohol (Ethanol)
- Ethylene Glycol (Antifreeze)
- Freon (Dichlorodifluoromethane All Types)
- Glycol, Other
- Halon
- Heptachlor
- Herbicide/Pesticide
- Hexachlorobenzene (also a pesticide)
- Insecticide
- Lead
- Magnesium Oxide (Slurry)
- Methyl Alcohol (Methanol)
- Mirex
- Other
- PCB
- Pentachloroethane
- Perchloroethylene
- Propylene Glycol
- Reserve Pit Fluids
- Sodium Hypochlorite
- Solvent
- Sulfur (Solid)
- Tetrachloroethene
- Therminal
- Toluene
- Trichloroethene
- Urea (Solid)
- Zinc
- Zinc Concentrate
- Zinc Slurry

Noncrude Oil
- Asphalt
- Aviation Fuel
- Ballast Water (containing oil)
- Bilge Oil
- Bunker
- Creosote
- Diesel
- Engine Lube Oil
- Gasoline
- Grease
- Hydraulic Oil
- Kerosene
- Naphtha
- Natural Gas
- Natural Gas Liquids
- Other
- Propane (LPG)
- Synthetic Oil
- Transformer Oil
- Transmission Oil
- Turbine Fuel
- Waste Oil (all types)

Process Water
- Process Water
- Produced Water
- Seawater
- Source Water

Unknown
- Unknown

Appendix B: Significant Releases *(July 1, 1995 - June 30 , 2002)*

1995

Month	Spill Date	Spill Name	Spill Number
July	07/05/95	F/V Mattie O	95279918601
	07/06/95	AVEC Hooper Bay	95279918701
	07/12/95	Petro Marine Inc.	95110119301
	07/17/95	Pacific Star Seafood	95239919805
	07/20/95	M/V Legend of the Sea	95119920101
	07/22/95	Ketchikan Pulp Co., Thorne Bay	95119920301
	07/22/95	M/V Northern Wind	95259920302
	07/23/95	Regent Star Cruise Ship	95229920401
	07/24/95	Taku Smokeries	95119920501
	07/26/95	Nightmute Hazmat	95279920701
August	08/03/95	Montana Creek	95119921501
	08/03/95	F-15 Crash	95309921501
	08/09/95	Princess Tour Bus	95210122101
	08/10/95	F/V Anna K	95119922201
	08/12/95	Double “R” Trucking	95119922401
	08/17/95	M/V Rotterdam	95119922901
	08/21/95	Kuskokwim River	95279923302
	08/22/95	Norquest Fisheries	95119923401
	08/24/95	Ninilchik River Bridge	95239923601
	08/30/95	Sherstone Tug Crane	95229924201
September	09/05/95	Alaskins	95110124901
	09/07/95	Wood River	95269925001
	09/11/95	Tug Tyee	95119925401
	09/23/95	Valdez Marine Terminal	95229926602
	09/24/95	Southcentral Floods 95	95239926702
	09/26/95	F/V Hoover	95119926903
October	10/01/95	Magill Trailer Park	95119927401
	10/01/95	F/V Rush	95119927402
	10/10/95	A-10 Crash	95309928301
	10/11/95	Chilkoot Lumber	95119928401
	10/11/95	Ship Creek, Anchorage	95239928401
	10/16/95	Golovin Gasoline	95389928901
	10/20/95	Fisher Fuels	95309929301
November	11/22/95	Juneau Travelodge	95119932601
December	12/01/95	Tug Tongass	95119935501
	12/05/95	KPL-Tesoro Tank 406	95239933901
	12/06/95	Great Western Chemical muriatic acid	95309934001
	12/06/95	UAF Bristol Bay Campus	95269934001
	12/10/95	Ecology Logging Tractor	95239934401
	12/12/95	Dutra-Seward Spill	95239934601
	12/17/95	Angoon Propane	95119935103

1996

Month	Spill Date	Spill Name	Spill Number
January	01/31/96	F/V Blue Fox	96249903101
February	02/07/96	F/V Ambition	96259903801
	02/20/96	St. Paul Bird Kill-M/V Citrus	96259905101
	02/29/96	Alaska Railroad	96309906002
	02/29/96	F/V All American	96259906001
March	03/16/96	Akutan Volcano	NA
	03/26/96	Kobuk Washeteria	96389908601
April	04/15/96	Ketchikan Pulp Corporation	96119910601
	04/20/96	APL Check Valve 92	96229911101
	04/21/96	Horseshoe Lake	96239911201
	04/21/96	Iliaska Lodge	96269911201
	04/22/96	Army Camp Hatcher Pass	96239911301
	04/24/96	Delta Airlines	96239911501
	04/25/96	Alaska Housing Authority	96309911501
	04/25/96	T/V ARCO Spirit	96229911601
May	05/01/96	Mat-Su Abandoned Drum	96239913501
	05/05/96	Kake	96119912601
	05/18/96	Green Paint Iliuliuk Creek	96259913901
	05/24/96	Cape Smythe Air	96399914501
	05/25/96	Chena River	96309914601
	05/28/96	Dept. of Transportation and Public Facilities, Juneau	96119914501
	05/31/96	Crooked Creek	96279915201
June	06/01/96	Big Lake	96239915301
	06/08/96	Bayview Subdivision, Juneau	96119916002
	06/17/96	Tuntutuliak Tank Farm	96279916901
	06/24/96	Little Susitna River	96239917601
July	07/02/96	Shemya Power Plant	96259918401
	07/14/96	Great Pacific Seafood, Whittier	96239919601
	07/19/96	Bethel Seawall	96279920101
	07/21/96	Tetlin Diesel Spill	96228918401
	07/25/96	Unocal Baker Platform	96239920701
	07/25/96	Unocal Baker Platform	96239920701
	07/26/96	Kincolith, B.C. (Portland Inlet)	96119920801
August	08/09/96	Unocal Steelhead Platform	96239922201
	08/14/96	Homer Small Boat Harbor	96239922701
	08/21/96	Kodiak Womans Bay	96249923401
	08/23/96	Ketchikan Pulp Corporation, Brinks Stack	96119923601
September	09/05/96	Ketchikan Pulp Corporation	96119924901
	09/24/96	U.S. FWS Housing Unit	96269926801
	09/26/96	Mendenhall Peninsula Road	96119927001
October	10/05/96	Trading Bay Crude Oil Pipeline	96239927901
	10/08/96	Valley Lumber, Juneau	96119928201
	10/16/96	F/V Pacific Dawn, Pelican	96119929003
	10/21/96	Ketchikan Pulp Corporation	96119929502
	10/26/96	Ketchikan Public Utilities	96119930001

	10/30/96	Elim	96389980401
November	11/15/96	Navy Arctic Submarine Laboratory, Wales	96389932001
	11/27/96	Thompson Pass, PLMP 776	96229933201
December	12/04/96	ZB-304, Yakutat	96119933901
	12/05/96	Texaco Ethanol Spill-POA	96239934001
	12/09/96	Barrow Public School	96399934401
	12/17/96	Kodiak USCG Air Station	96249935201
	12/25/96	M/V Baneasa	96258936001

1997

Month	Spill Date	Spill Name	Spill Number
January	01/01/97	Crowley Barge 415	97119900301
	01/29/97	Whittier DFSC JP8 Spill	97239902902
February	02/15/97	Juneau (Downtown)	97119904601
	02/25/97	Overseas Chicago	97229905601
	02/27/97	Crowley Barge Oregon	97239905801
March	03/06/97	Steelhead Platform	97239906501
	03/17/97	Arco Drill Site 4	97399907601
	03/24/97	Betty King Alley, Ketchikan	97119908303
April	04/02/97	Pan Dynamic Incident	97249909201
	04/03/97	Star of Kodiak Fire	97249909301
	04/23/97	Whittier Waste Oil Spill	97239911302
	04/25/97	East Point Seafood Facility Fire	97259911501
	04/30/97	West Tank Farm Catchment	97229912001
May	05/02/97	Signature Pipeline Break	97239912201
	05/10/97	George Inlet, Ketchikan	97119913001
	05/16/97	Barge Boxer	97269913601
	05/21/97	Snettisham Power Plant	97119912201
June	06/22/97	Milne Point	97399917301
	06/25/97	F/V Liz	97119917701
	06/25/97	F/V Liz, Thorne Bay	97119917701
	06/26/97	Gambell, St. Lawrence Island	97389917701
July	07/15/97	Kittens Islands	97119919601
	07/15/97	Arco Kuparuk	97399919601
	07/15/97	Kittens (Admiralty Island)	97119919601
	07/17/97	Elmendorf Hardstand	97239918901
	07/17/97	Roosevelt Drive, Hoonah	97119919801
	07/18/97	Savoonga	97389919901
	07/20/97	Tsiu River Capsized F/V	97229920101
	07/21/97	Forty Niner Barge FNT 255	97229920201
	07/22/97	Alaska Marine Lines, Ketchikan	97119920301
	07/22/97	AML CRS-2	97119920301
August	08/14/97	Tesoro Port 800	97239922601
	08/15/97	Spirit of Alaska	97119922701
	08/18/97	KPL Transfer 818	97239923001
	08/18/97	CRS-2, Haines	97119923001

	08/21/97	Big State Logistics (Richardson Highway)	97309923301
	08/22/97	Tlingit-Haida Regional Electrical Authority	97119923401
September	09/04/97	Elmendorf 10” Flight Line	97239924701
	09/05/97	Tlingit-Haida Regional Electrical Authority	97119924801
	09/07/97	Dixie Avenger	97229925001
	09/08/97	F/V Ronny	97259925101
	09/08/97	USS Hewitt	97119925102
	09/11/97	Wards Cove Packing Ammonia	97119925401
	09/16/97	Ninilchik Sulfur Spill	97239925901
	09/20/97	North Tongass Highway, Ketchikan	97119926301
October	10/04/97	Coastal Trader, Craig	97119927701
	10/27/97	Elmendorf AERO Club	97239930001
November	11/10/97	AK Terminals Sterling Hwy MP 43.5	97239931401
	11/11/97	Colville Inc. (Dalton Highway)	97399931501
	11/15/97	Riverways 10 (Yutana Barge Lines)	98389917501
	11/25/97	Wainwright Water Plant	97399932902
	11/26/97	Kuroshima	97259933001
December	12/07/97	Lynden Parks Hwy MP 52.0	97239934101
	12/10/97	Hooper Bay Fuel Oil	97279934401
	12/13/97	TOSCO tank farm, Ketchikan	97119934702
	12/18/97	M/V Red Munson	97229935201

1998

Month	Spill Date	Spill Name	Spill Number
January	01/05/98	Glacier Marine Lube Oil	98119900501
	01/28/98	Pennock Island Drum	98119902802
February	02/06/98	Unocal King Salmon Platform	98239903701
	02/12/98	Alaska I	98259904301
	02/22/98	M/V Hekabe	98259905301
	02/24/98	Ketchikan Pulp Company	98119805502
	02/27/98	T/V Arco Texas	98229905801
March	03/17/98	Ekwok Tank Spill	98269907601
	03/20/98	Emmonak LYSD Tanks	98279907901
	03/23/98	Trucano Crane	98119908201
April	04/16/98	Overseas Juneau	98229909601
	04/17/98	M/V Samaqu	98119910701
	04/24/98	F/V Banner	98119911401
May	05/08/98	Kootznoowoo Cholmondeley Camp	98119912801
	05/08/98	Vance	98119912802
	05/15/98	Polaris School	98239913501
	05/29/98	Kotlik Elementary School	98279914901
June	06/05/98	Yakutat Ammonia	98119915601
	06/15/98	Fairbanks Drug Lab	98309916601
	06/16/98	Marine View Chemical Spill	98119916703
July	7/1/1998	Icicle Seafoods	98239918201
	7/8/1998	M/V Milos Reefer	98279918901

	7/13/1998	Peter Pan Ammonia Release	98269919301
	7/14/1998	Juneau Airport STE-1	98119919502
	7/24/1998	CEM Leasing Truck Rollover	98309920501
August	8/7/1998	Palmer Correctional Center	98239921401
	8/14/1998	BWT Hose Release	98229922501
	8/14/1998	Coastal Marine Barge Grounding	none assigned
	8/19/1998	Faulkner Walsh Tug	98279922701
	8/27/1998	Lily Lake Condos	98249922201
September	9/1/1998	Women's Bay Grounding	98249924401
October	No Sitreps		
November	11/3/1998	Z Pad	98399930301
	11/5/1998	White Pass & Yukon Oil Separator	98119930302
December	No Sitreps		

1999

Month	Spill Date	Spill Name	Spill Number
January	1/6/1999	Swanson River	99239900601
	1/13/1999	Aurora Harbor Mystery Spill	99119901301
	1/14/1999	Abacus Mineral Corporation	99119801401
February	2/3/1999	Alaska Railroad Diesel Spill	99239903401
	2/6/1999	Chesapeake Trader	99239903701
	2/17/1999	Valdez Petroleum Terminal	99229904801
	2/20/1999	M/V Hekifu	none assigned
	2/25/1999	Tuluksak Traditional Council Power Plant	99279905601
March	No Sitreps		
April	4/15/1999	Tesoro Hot Oil	99239908804
	4/16/1999	Power Creek Avalanche	99229910501
May	5/4/1999	Petro Marine	99119812402
	5/6/1999	Tug Mogul	99119812601
	5/6/1999	Tesoro KPL Rupture	99239912501
	5/8/1999	F/V Controller Bay	99259912801
	5/10/1999	M/V Red Fin	99259913001
	5/13/1999	Whittier Storm Drain	99239913301
	5/27/1999	Little Diomede	99389914701
	5/27/1999	Goodnews Bay	99279910501
	5/28/1999	Soldotna Chlorine Release	none assigned
June	6/6/1999	F/V Caprice	99239915701
	6/11/1999	ARCO DS 14	99399916101
	6/12/1999	M/V Wilderness Explorer	99119916301
	6/16/1999	BT Alaska	99229916701
	6/17/1999	Anna Platform	99239916801
	6/22/1999	Service Truck Rollover	99239917301
July	7/7/1999	Igiugig Power Plant	99269918801
	7/8/1999	Tanker Vessel Denali	Potential
	7/8/1999	Naval Well #8 -- Umiat	99399918901
	7/14/1999	Valdez Marine Terminal Tank 52-54	99229919501

	7/27/1999	Spirit of 98	99119920801
August	8/4/1999	Ketchum Jet A	99239921601
	8/16/1999	Pump Station 12 Leak	99229922801
	8/20/1999	Unocal Explosion	99239923201
September	9/5/1999	International Aviation Jet Fuel Spill	99239924801
	9/7/1999	Service Oil&Gas Tanker Truck Rollover #2	99239925001
	9/7/1999	Weaver Brothers Truck Rollover	99309925001
	9/10/1999	Kwigillingok Washeteria Spill	99279925301
	9/13/1999	Fairbanks airport CSS-1 Spill	99309925601
	9/16/1999	Seldovia Cannery Ammonia Release	99239925901
	9/22/1999	ROK Trucking Rollover	99239926501
	9/22/1999	F/V Lady L grounding	99229926501
	9/30/1999	Yutana Barge Mekoryuk	99279927301
	9/30/1999	Japan radiation release	None assigned
October	10/7/1999	Duke Island Ordinance	None assigned
	10/19/1999	Cordova Waste Oil	99229929201
	10/23/1999	Unocal Dillon Platform	99239929801
	10/31/1999	Alaska Railroad Derailment	99239930401
November	11/6/1999	Alaska Railroad Spills	99309931001
	11/6/1999	Alaska Railroad Spills	99309931002
	11/8/1999	F/V Mitrophenia	99249931001
	11/21/1999	Unocal Produced Water	99239932501
	11/30/1999	Seldovia High School Fuel Spill	99239933402
December	12/2/1999	Freight Barge HOMEBAR 1	99239933601
	12/14/1999	Mystery Sheen at Alyeska Marine Terminal	99229934801
	12/22/1999	Alaska Railroad Derailment, Gold Creek	99239935601

2000

Month	Spill Date	Spill Name	Spill Number
January	1/4/2000	Tug Malolo	None assigned
	1/5/2000	Ivanoff Bay Power Plant	00269900301
	1/19/2000	Tank Barge ENERGIZER	00239901901
February	2/1/2000	Alaska Railroad Anchorage Yard Roundhouse	00239903202
	2/2/2000	Sportsman’s Inn - Whittier	00229903401
	2/3/2000	Atmautluak Washeteria	00279903302
	2/7/2000	Gambell Presbyterian Church	00389903801
	2/10/2000	Sunshine Oil/Petro Marine Tank Truck	00119904101
	2/11/2000	F/V American Star	00259904201
	2/18/2000	Alaska Nitrogen Products	00239904901
	2/21/2000	T/V Seariver Benicia	00229905201
	2/25/2000	M/V Pacsun	00119905701
	2/27/2000	Valdez Propane Release	None assigned
March	3/1/2000	Auke Bay PO Mystery Spill	00119905601
	3/8/2000	Tesoro Ethanol, Anchorage	00239906701
	3/9/2000	North Pacific Propane Leak, Valdez	00229906901
	3/15/2000	CSX Propane, Kodiak	00249907501

	3/20/2000	Gulkana Glacier	00309908001
	3/24/2000	Nautilus Seafoods - ammonia release, Valdez	00229908401
	3/24/2000	West Coast Aviation, Unalakleet	00389908401
April	4/6/2000	Williams Tank 1001 Fire	00239909701
	4/13/2000	Tesoro Pipeline Terminal -- Anchorage	00239910401
	4/17/2000	Healy Lake Spill	00309910501
	4/17/2000	ARRC Tank Car ARR 9306	00239910801
	4/20/2000	F/V Destiny	00249911101
	4/20/2000	Chena Hot Springs Road Permafrost Test Facility	00309911101
	4/20/2000	F/V Starrgavin	00259911101
	4/28/2000	Lower Yukon School District-Pitka Point Spill	00279911801
	4/29/2000	Ivanof Bay Power Plant Spill #2	00259912001
May	5/14/2000	Stevens Village Release	00309913101
	5/18/2000	Inlet Fisheries -- Near Bethel	00279913401
	5/22/2000	Valdez Marine Terminal, Berth 4	00229914301
June	6/8/2000	Airland Transport Truck Spill	00239915801
	6/10/2000	Savoonga Post Office	00389916101
	6/19/2000	Weaver Brothers, Mile 75 Seward Hwy	00239917101
	6/20/2000	Aleknagik Washeteria	00269917201
	6/23/2000	Unocal Swanson River Field Produced Water	00239917301
	6/28/2000	Newport Petroleum Inc. Barge 225	00249918001
	6/30/2000	Alyeska Marine Terminal	00229918102
July	7/6/2000	Summit Lake Truck Rollover	00309918801
	7/12/2000	ARRC derailment, Mile 152.8	00239919401
	7/24/2000	T/V POLAR CALIFORNIA	00229920602
	7/26/2000	KPL Recirculation Line	00239920801
	7/26/2000	Chefornak Tank Farm	00279920801
August	8/2/2000	Valdez Marine Terminal-West Tank Farm	00229921501
	8/11/2000	Inlet Fish Producers' Barge Harvester	00279922201
	8/13/2000	Grounded Qayuuttaq Dredge	00399922301
	8/21/2000	BP Gathering Center	00399923401
September	9/1/2000	Unocal - Swanson River Produced Water	00239924502
	9/11/2000	Tug Millennium Star	00259925501
	9/15/2000	Duck Creek Heating Oil Leak	00991124101
	9/20/2000	Whittier Harbor Fertilizer Spill	00239926401
	9/20/2000	Seward Highway MP 109	00239926402
	9/21/2000	Alaska Nitrogen Products Ammonia Release	00239926501
	9/27/2000	Monashka Bay Fish Kill	None Assigned
	9/27/2000	Williams Glycol Spill	00309926401
October	10/2/2000	Ouzinkie Shrimp Kill	None Assigned
	10/10/2000	Red Dog Mine Lead Concentrate	00389928301
	10/11/2000	5175 Thane Road, Juneau	00991128501
	10/21/2000	Polar Fuels Spill	00309929501
	10/23/2000	T/V SeaRiver North Slope	00229929701
November	11/2/2000	Air Land Transport Rollover	00309930701
	11/6/2000	Alaska Pacific Seafood NH3 Release	00249931101
	11/20/2000	New Port Walter Bunker Spill	00119932301
	11/28/2000	Cross Timbers Onshore Facility	00239933201

	11/29/2000	Tuntutuliak-TCSA Bulk Tank Spill	00279933301
December	12/11/2000	Whitestone Logging Inc., Hoonah	00119934401
	12/19/2000	Sag River DOT Maintenance Camp Spill	00399935201
	12/20/2000	North Pacific Fuel	00259035401
	12/21/2000	Gagman Heating Oil Spill	00229935401
	12/26/2000	HB&R Tank Overfill	00399935901
	12/28/2000	Red Dog Mine Zinc Spill	00389936301

2001

Month	Spill Date	Spill Name	Spill Number
January	1/4/2001	Mappa Inc. Laboratory Fire	01309900401
	1/10/2001	Gold Rush Estates Fuel Spill	01309901001
	1/16/2001	Northstar Containment Cell #6	01399901601
	1/19/2001	F/V Miss Marie	01259901901
	1/20/2001	Elim Water Plant	01389902001
	1/22/2001	Injection Well R Pad Well 3AI	01399902201
	1/23/2001	Nome D Street Spill	01389902301
	1/25/2001	Phillips Home Heating Oil Spill	01269902501
	1/30/2001	F/V Veter	01229903001
February	2/5/2001	Dolly Varden Mystery Sheen	01239903601
	2/12/2001	T/V SeaRiver Benicia	01229904101
	2/16/2001	42 Mile Red Dog Mine Zinc Spill	01389904701
	2/19 /2001	Drill Site 7, Well #8, Prudhoe Bay	01399905001
	2/20/2001	GC1 Flow Line, Prudhoe Bay	01399905002
	2/20/2001	Chignik Norquest Seafoods	01269905101
	2/20/2001	Windray Barge	01269904701
March	3/1/2001	Amodo Home Heating Oil Spill	01249904101
	3/6/2001	Grind & Inject Facility, Surfco Pad	01399906501
	3/7/2001	Eielson AFB, Building 6248	01309906601
	3/27/2001	HAGO line near Tank 901	01309908201
	3/28/2001	Mill Door M-4 Slurry Spill	01389908601
April	4/3/2001	Williams CU2 blend bldg.	01309909201
	4/16/2001	CPF1 Produced Water Spill	01399910501
	4/13/2001	3I Seawater Pipeline	01399908401
	4/16/2001	Tesoro Refinery Pipeline	01239910302
	4/18/2001	University Park Day Tank Spill	01309910701
	4/23/2001	Well 1-01/J19MPI Crude Oil	01399911301
	4/25/2001	Woodbine Cannery Gasoline Spill	01269911401
	4/25/2001	Cordova Bunker Tank Spill	01229911401
	4/26/2001	Chignik Pride Fisheries Generator Spill	01269911501
	4/30/2001	Valley Park Chlorine	01119912001
May	5/8/2001	T/V SeaRiver North Slope	01229912801
	5/9/2001	Tank Barge Chilkat Warrior	01239912801
	5/14/2001	Cook Inlet Mystery Sheen	01239913401
	5/16/2001	Cross Timbers Outfall Line	01239913601
	5/21/2001	Moody's Marina, Aleknagik	01269914101

	5/21/2001	Fairbanks Airport Ethylene Glycol	01309913901
	5/25/2001	Mabah	None Assigned
	5/29/2001	T/B Chilkat Warrior	01239914901
June	6/4/2001	Yutana Barge RiverWay 10	01309915301
	6/11/2001	Cape Simpson Well #31	01399915801
	6/14/2001	Nakeen Abandoned Cannery	01269921201
	6/21/2001	Eureka Dome Rollover	01309917201
	6/26/2001	Fisherman's Bend Diesel Line	01119917701
	6/28/2001	Donohue's Marina Diesel Line	01119917901
	6/29/2001	Seward-Sterling Hwy "Y"	0123991800
July	7/2/2001	Umiat Seep	01399918001
	7/7/2001	DS 1 Flowline, Prudhoe Bay	01399918801
	7/17/2001	Nabors Rig 7ES Fire	01399919801
	7/20/2001	Red Dog Mine Zinc Spill	01389920101
	7/21/2001	DS L2 Common Line	01399920201
	7/26/2001	F/V Excursion	01259920701
	7/26/2001	F/V Vanguard	01229920701
	7/27/2001	F/V Ben B	01119920801
	7/31/2001	Cook Inlet Mystery Sheen	01239921201
August	8/1/2001	Tesoro Pipeline, Mile 13.75	01239921202
	8/1/2001	Valdez Marine Terminal, Berth 4 Loading Arm	01229921201
	8/1/2001	F/V Ellis H. Gracie	01119921402
	8/4/2001	F/V Windy Bay	01229921601
	8/10/2001	Milne Point G-Pad Mud Spill	01399922201
	8/19/2001	Nabors 16E Mud Spill	01399923102
	8/21/2001	Lake Nunavaugaluk Diesel Spill	01269923301
	8/24/2001	F/V Revenge II	01119923601
	8/27/2001	Richardson Hwy MP 215 Tanker Rollover	01309923901
	8/27/2001	F/V Western II	01009923901
	8/28/2001	F/V Eveline S.	01009924001
September	9/4/2001	Kenai River Mystery Sheen	01239924703
	9/7/2001	Tesoro-AIA Pipeline	01239925001
	9/11/2001	Valley Park CO2 release, Ketchikan	01119925401
	9/12/2001	Unocal King Salmon Platform	01239925501
	9/13/2001	F/V Cherokee Maid	01991125601
	9/17/2001	Williams Glycol Release	01309926001
	9/19/2001	Seley Dock Facility, Ketchikan	01119926201
	9/25/2001	Alpine Airstrip	01399926801
October	10/1/2001	Alyeska Pump Station 5 Crude Release	01399926501
	10/2/2001	North Pacific Processors, Cannery	01229927501
	10/4/2001	TAPS Bullet Hole Release	01309927701
	10/29/2001	Sterling Hwy Truck Rollover	01239930201
	10/30/2001	U Pad Truck Rollover	01399930301
November	11/2/2001	Quadra Xylene Spill	01309930501
	11/27/2001	Unocal Dillon Platform	01239933101
December	12/6/2001	Amanda B	01119933801
	12/10/2001	Deering Diesel Spill	01389934401
	12/10/2001	Mendenhall Wastewater Treatment Plant, Juneau	01119934401

	12/15/2001	AHTNA Fuel Spill	02229900401
	12/18/2001	Alyeska Pump Station 6 Diesel Fuel Release	01309935101

2002

Month	Spill Date	Spill Name	Spill Number
January	1/1/2002	Alyeska Brine Release, Pump Station 1	02399900101
	1/3/2002	Williams Refinery Kerosene Spill	02309900301
	1/8/2002	Crab Bay Bunker Barge	02119900801
	1/12/2002	Osborne Construction - Chevak	02279901201
	1/12/2002	Lily Lake, Kodiak	02249901401
	1/14/2002	F Pad Well #48	02399901401
	1/16/2002	T/V SeaRiver Baytown	02229901601
	1/29/2002	Swanson River Well 21-34 Flow Line	02239902901
February	2/1/2002	Teller School Day Tank Overfill	02389903201
	2/3/2002	North Star Flare Release	02399903401
	2/13/2002	Valdez Petroleum Terminal	02229904401
March	3/13/2002	Curyung Native Village Council Spill	02269907201
	3/18/2002	Circle Lake Road, Homer	02269907202
	3/19/2002	City of Manokotak Day Tank	02269907801
	3/22/2002	Mountain Village #75 Water Wellhouse	02279908101
April	4/7/2002	Drill Site 2A, Kuparuk	02399909701
	4/10/2002	Juneau Airport Crash	02119910003
	4/17/2002	H Pad Well #21	02399910701
	4/17/2002	VMT Ballast Water Manifold Spill	02229910701
	4/20/2002	King Salmon Platform Fire	none assigned
	4/22/2002	Koliganek Tank Farm	02269911201
	4/28/2002	Eureka Roadhouse	02239912101
	4/29/2002	Williams Refinery Sulfolane/Naphtha Spill	02309911901
	4/29/2002	New Stuyahok School Seep	02269911901
May	5/5/2002	City of Ekwok Waste Oil	02269912601
	5/6/2002	ARRC Loco 2808, Seward Yard Spill	02239912101
	5/12/2002	Nulato School Tank Release	02309913201
	5/15/2002	Nuiqsut Landfill Spills	02399913301
	5/15/2002	Nuiqsut Store	02399913301
	5/23/2002	Leask HHOT Spill Klawock	02119914301
June	6/11/2002	Portage Creek Council Spill	02269916201